# PROCOMM PLUS®

*Intuitive Communications*

## *User Manual*

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# *PROCOMM® PLUS*

## User Manual

January 1991

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# Contents

**Introducing PROCOMM PLUS** ..... 1

**Using This Manual** ..... 3

Typographical Conventions ..... 4

***Chapter 1: Getting Started*** ..... 5

Overview ..... 6
What You'll Need ..... 7
Installing PROCOMM PLUS ..... 7
Setting Up PROCOMM PLUS ..... 8
*Configuring Your Modem* ..... 8
*Configuring Your Computer* ..... 10
*Configuring PROCOMM PLUS* ..... 11
Starting PROCOMM PLUS ..... 12
*Other Ways of Starting PROCOMM PLUS* ..... 13
The Terminal Mode Screen ..... 15
Using PROCOMM PLUS Commands ..... 16
*Using the [Alt] and [Ctrl] Keys* ..... 16
*Using the Pulldown Menu Line* ..... 17
Specifying Your Modem's COM Port ..... 19
Exiting PROCOMM PLUS ..... 21
If You Have a Problem ..... 22

***Chapter 2: Going On-Line*** ..... 25

Displaying the Dialing Directory ..... 26
Adding an Entry ..... 27
Making the Connection ..... 35
Logging Data from Your Screen ..... 39

***Chapter 3: Downloading a File*** ..... 43

Telling the BBS to Download the File ..... 44
Telling PROCOMM PLUS to Download the File ..... 46
Reading the File ..... 49

*Chapter 4: Automating Communications* 51
Creating Meta Keys....52
Using Meta Keys....54
Introducing Script Files....56
Using a Script File with the Dialing Directory....58
Using a Script File in Terminal Mode....61
Where to Go from Here....62

*Chapter 5: Making the Connection* 63
Overview....64
Placing a Call....65
Answering a Call....67

*Chapter 6: Using the Dialing Directory* 71
Displaying Dialing Directory Entries....73
Highlighting an Entry....74
Adding or Changing an Entry....75
Adding or Changing a Dialing Code....80
Dialing a Computer....83
Call History Data....88
Erasing Entries....89
Attaching Notes to an Entry....90
Printing the Dialing Directory....90
Sorting the Dialing Directory....91
Exiting the Dialing Directory....91

*Chapter 7: Using PROCOMM PLUS Commands* 93
Overview....95
Auto Answer....96
Break Key....96
Change Directory....97
Chat Mode....97
Clear Screen....98
Clipboard....99
CR-CR/LF Toggle....101
Dialing Directory....102
DOS Gateway....102
Duplex Toggle....103
Editor....103
Elapsed Time....105
Exit....105
File Directory....106
Hang Up....107
Help....107

Host Mode ..... 109
Init Modem ..... 109
Kermit Server Commands ..... 109
Key Mapping ..... 110
Line/Port Setup ..... 111
Log File On/Off ..... 111
Log File Pause ..... 113
Meta Keys ..... 113
Monitor Mode ..... 117
Printer On/Off ..... 118
Program Information ..... 119
Receive Files ..... 119
Record Mode ..... 122
Redisplay ..... 123
Reset Terminal ..... 125
Screen Pause ..... 125
Screen Snapshot ..... 125
Script Files ..... 126
Send Files ..... 127
Setup Facility ..... 129
Toggle Lines ..... 130
Toggle Status Line ..... 131
Translate Table ..... 131
View a File ..... 132

***Chapter 8: Customizing PROCOMM PLUS*** ***133***

Overview ..... 134
Changing Line and Port Settings ..... 135
Using the Setup Facility ..... 137
*Modem General Options* ..... *141*
*Modem Command Options* ..... *144*
*Modem Result Messages* ..... *149*
*Modem Port Assignments* ..... *151*
*Terminal Options* ..... *153*
*Display/Sound Options* ..... *158*
*General Options* ..... *161*
*Host Mode Options* ..... *166*
*File/Path Options* ..... *169*
*Terminal Color Options* ..... *170*
*General Protocol Options* ..... *173*
*ASCII Transfer Options* ..... *175*
*Kermit Options* ..... *178*
*ZMODEM Options* ..... *179*
*External Protocol Options* ..... *184*

*PCEDIT Options* ..... *186*
*Editor Color Options* ..... *188*
Changing the Translation Table ..... 189
Changing the Keyboard Mapping ..... 192

***Chapter 9: Using Host Mode*** ***195***

Overview ..... 196
Setting Up for Host Mode ..... 197
*Setting Up PROCOMM PLUS Host* ..... *197*
*Setting Up the User File* ..... *198*
Starting Host Mode ..... 200
When a Remote User Logs On ..... 202
What Remote Users Can Do ..... 204
*Normal and Limited Users* ..... *204*
*Privileged Users* ..... *206*
What the System Operator Can Do ..... 208
*Controlling the Remote User's Keyboard* ..... *208*
*Entering Chat Mode* ..... *208*
*Disconnecting the Remote User* ..... *208*
*DOS Gateway* ..... *208*
*Logging On Locally* ..... *209*
*Exiting Host Mode* ..... *210*
Managing Host Files ..... 210
*The Log-On Message File* ..... *210*
*The New User File* ..... *211*
*The Help File* ..... *211*
*The Alternate Download Menu File* ..... *211*
*The Alternate Regular Menu File* ..... *212*
*The Alternate Privileged Menu File* ..... *212*
*The Alternate File Protocol Menu File* ..... *212*
*The Alternate Mail Read Menu File* ..... *212*
*The History File* ..... *213*
*The Upload Directory File* ..... *213*
*The Mail Files* ..... *214*
*Where to Keep These Files* ..... *215*

***Appendixes*** ***217***

**Appendix A: Terminal-Mode Command Summary** ..... **219**

**Appendix B: File-Transfer Protocols** ..... **225**

Overview ..... 226
XMODEM ..... 226
KERMIT ..... 227
ASCII ..... 228

RASCII ....229
1K-XMODEM ....229
YMODEM ....229
MODEM7 ....230
TELINK ....230
ZMODEM ....230
WXMODEM ....230
SEALINK ....231
COMPUSERVE B ....231
1K-XMODEM-G ....231
YMODEM-G ....231
IMODEM ....232
External 1, 2, 3 ....232
Summary ....233

**Appendix C: Common Questions ....235**
General Problems ....236
Dialing Problems ....241
Problems with Host Mode ....242
Problems When Running an External Program ....243
Problems with Terminal Emulation ....245
Checking for Software Conflicts ....247

**Appendix D: Technical Information ....251**
Files Used by PROCOMM PLUS ....252
Translating Control Codes ....255
ASCII Table ....257
Editing Text ....258
Background Operation in Multitasking Environments ....259

**Appendix E: Terminal Emulation ....263**
Overview ....264
TTY ....265
DEC VT52 ....265
DEC VT100/102 and Wyse 75 ....266
DEC VT220/320 and Televideo 922 ....267
Data General 100 ....268
Data General 200/210 ....269
ANSI X3.64 ....270
IBM PC ....271
TeleVideo 900 Series ....273
IBM 3101 ....274
IBM 3161 ....275

Lear Siegler ADM 3A/5 ..... 276
Lear Siegler ADM 31 ..... 276
Esprit 3 ..... 277
Heath/Zenith 19 ..... 278
ADDS 60 and 90 ..... 279
Wyse 50 ..... 280
Wyse 100 ..... 281
IBM 3270/950 ..... 282
AT&T 605 ..... 284
AT&T 4410 ..... 285

**Appendix F: Making a Null Modem Cable ..... 287**

**Appendix G: Introduction to Communications ..... 289**

Overview ..... 290
Modems ..... 290
ASCII ..... 291
Bits and Bytes ..... 291
Serial and Parallel Transmission ..... 292
Start and Stop Bits ..... 293
Parity ..... 293
Protocols ..... 294
Baud Rate ..... 295
Duplex ..... 295

***Index*** **297**

# *Introducing* PROCOMM PLUS

... the *intuitive* communications software!

PROCOMM PLUS is everything you'll need in communications software! Here's a brief summary of its major features:

**Fully-Automated Dialing Directory.** You can keep the names, numbers and session settings of up to 200 computers in a Dialing Directory—and you can create and use any number of Dialing Directories. PROCOMM PLUS lets you include up to 10 dialing codes in your entries, so you can easily access long-distance carriers or dial out through a PBX system. PROCOMM PLUS can dial either a single number or a list of numbers, with automatic redial if a number is busy. It keeps track of the date of your last call, and the total number of calls for each entry. In addition, it keeps a log of the date and time of all calls so that you can easily verify your telephone bills. You can sort your directories in 5 different ways, and even "attach" text reminders and notes to an entry for future reference.

**Error-Correcting File Transfer Protocols.** PROCOMM PLUS supports 15 standard protocols, and it allows you to specify up to three "external" protocols.

**Terminal Emulation.** PROCOMM PLUS emulates 33 popular video-display terminals (including ANSI for bulletin board use). Terminal emulation permits you to run full-screen mini- and mainframe applications using your PC as a remote terminal. PROCOMM PLUS also features both true 132-column operation (with most popular high-resolution monitors and graphic adaptors) and 132-column "scrolling" emulation (for all monitor and card combinations).

**Context-Sensitive Help.** PROCOMM PLUS can give you full-screen detailed help no matter where you are in the program. The context-sensitive help facility always knows "what you are doing" and displays help on the current task.

**A Powerful Script Language.** PROCOMM PLUS' ASPECT script language is an extremely fast and powerful, full-featured compiled programming language, with a structure similar to the popular "C" language. Conditionals (IF/THEN/ELSE and SWITCH/CASE) are supported, along with advanced screen handling, file I/O, mathematical functions, looping, user-defined and system variables, procedures and much more. Your programs are automatically compiled for efficiency, speed and security. You can use script files to perform automated log-ons, unattended file transfers, and many other tasks. Or, you can use a script file to have PROCOMM PLUS "come alive" any time, night or day. For example, PROCOMM PLUS will call your favorite information service, download required data and print a report; all while you get a good night's sleep, and when telephone and connect rates are lowest! Sample script files are supplied for automated log-on to CompuServe and many other information services.

**Keyboard Automation.** PROCOMM PLUS features 10 "multifunction" Meta keys for storing frequently-transmitted character strings (such as user IDs and passwords), running scripts with a single key, executing external programs or "hooking" to external programs you write yourself! Plus, you can redefine up to 79 separate keys for each of the 33 terminal emulations.

**Line Settings.** PROCOMM PLUS operates at 300, 1200, 2400, 4800, 9600, 19,200, 38,400, 57,600 and 115,200 baud. It can operate with any parity, 7 or 8 data bits and 1 or 2 stop bits. PROCOMM PLUS supports up to 8 user-definable serial ports, and each Dialing Directory entry can be assigned its own serial port.

**Host Mode.** PROCOMM PLUS' powerful Host mode allows remote access to your machine for unattended file transfers, electronic mail, DOS access, remote program execution and more. The Host operator can assign individual user IDs, passwords and security levels to the remote users. Custom menus and external programs can be easily added to Host.

**Chat Mode.** PROCOMM PLUS lets you split the screen when chatting with someone at a remote computer (or for on-line conferencing in CompuServe's CB Simulator).

**Multitasking Environments.** PROCOMM PLUS runs under Windows, DESQview, TopView and most other multitasking software.

# *Using This Manual*

This manual provides the general information and the specific instructions you'll need to use the many features of PROCOMM PLUS. It includes a tutorial to lead you through a complete session with a remote computer, and describes each command and option in detail.

In almost every case, you'll be using PROCOMM PLUS *interactively* by typing commands and text from your PC's keyboard. For many users, interactive operation is all that's required for basic terminal operations and file transfers.

However, there are many communications tasks that can be partially or fully automated; for these applications, PROCOMM PLUS includes the powerful ASPECT script language. If you're writing a script, you'll find complete, detailed technical documentation for the ASPECT language in a separate manual, the "ASPECT SCRIPT LANGUAGE REFERENCE MANUAL".

Each chapter begins with an *Overview* (like this one), which will introduce the topics to be discussed and the purpose of that chapter. Use these "road signs" to identify both the chapters you need to read and those that you can skip.

## *Typographical Conventions*

To avoid confusion, we'll use several conventions throughout this manual to represent keys you press and information you type:

- A key you should press appears like this: [Enter].
- A key combination (like [Alt]-[X]) means you should hold down the [Alt] key while you press the indicated key.
- A numeric zero appears like this: 0. An uppercase letter "oh" appears like this: O.
- A command you need to type exactly as shown appears like this:

  ***diskcopy a: a:***

CHAPTER

# 1

# Getting Started


Overview ..... 6
What You'll Need ..... 7
Installing PROCOMM PLUS ..... 7
Setting Up PROCOMM PLUS ..... 8
*Configuring Your Modem* ..... *8*
*Configuring Your Computer* ..... *10*
*Configuring PROCOMM PLUS* ..... *11*
Starting PROCOMM PLUS ..... 12
*Other Ways of Starting PROCOMM PLUS* ..... *13*
The Terminal Mode Screen ..... 15
Using PROCOMM PLUS Commands ..... 16
*Using the [Alt] and [Ctrl] Keys* ..... *16*
*Using the Pulldown Menu Line* ..... *17*
Specifying Your Modem's COM Port ..... 19
Exiting PROCOMM PLUS ..... 21
If You Have a Problem ..... 22

# *Overview*

This chapter describes:

- The hardware you'll need to run PROCOMM PLUS.
- How to install the program.
- How to set up your modem, your computer and PROCOMM PLUS so that you can begin working.
- How to start and exit PROCOMM PLUS.
- How to enter Terminal mode commands.
- How to get help if you need it.
- What to do if you have a problem.

## *What You'll Need*

- **Computer:** an IBM® PC, XT, AT, PS/2 or compatible computer.
- **Memory:** at least 192K of available RAM.
- **Operating System:** PC-DOS or MS-DOS, version 2.0 or later.
- **Disk Drives:** at least one floppy drive, or at least one floppy drive and one hard drive.
- **Display:** a monochrome monitor and display adapter, a composite monitor with a Color Graphics Adapter, an EGA monitor and EGA display adaptor, a VGA monitor and VGA adaptor or a monitor and adapter compatible with any of these.
- **Modem:** Virtually any modem, Hayes®-compatible or not, external or internal, any speed. A direct, wired serial connection between computers doesn't require a modem, but you'll need a special cable (called a "null modem cable") to connect the two machines. You'll find more information on null modem cables in Appendix F of this manual.
- **Serial port:** Required only if you're using an external modem or connecting directly to another computer.

## *Installing PROCOMM PLUS*

**IMPORTANT: Be sure to fill out the Registration Card that came in the PROCOMM PLUS package and return it to *DATASTORM TECHNOLOGIES, INC.* You *must* do this in order to receive technical support and to receive information about updates. The Registration Card asks for the serial and version number of your copy of *PROCOMM PLUS*; you'll find the serial number on the card enclosed with your *PROCOMM PLUS* diskettes, and the version number is displayed on the opening screen. After you install *PROCOMM PLUS*, your serial number will also appear on the Information screen (you can call this screen with the [Alt]-[I] command in Terminal mode).**

**IMPORTANT: You MUST use the PCINSTAL program on your distribution diskettes to install PROCOMM PLUS; simply copying files from the distribution diskettes will not properly configure PROCOMM PLUS. PCINSTAL is designed to copy the appropriate files and optimize PROCOMM PLUS for your system. To run this program:**

1. *Insert the PROCOMM PLUS disk labelled #1 in drive A.*
2. *Type* a:pcinstal *and then press* [Enter].
3. *Follow the instructions that appear on the screen. PCINSTAL is quite user-friendly and comprehensive.*

- **Store your original PROCOMM PLUS diskettes in a safe place!**

If you're using a composite monochrome monitor with a color graphics display board, use the /b switch to force PCINSTAL to "monochrome" (or black-and-white) mode. To run PCINSTAL in monochrome mode, type:

*a:pcinstal /b*

and press [Enter].

PCINSTAL performs many tasks necessary for a proper installation (including the required conversion of several files, if you're upgrading from an earlier version of PROCOMM PLUS). Additionally, PCINSTAL allows you to easily adapt PROCOMM PLUS to new hardware you may acquire in the future (for example, a new modem, graphics card or monitor) **without** having to completely re-install PROCOMM PLUS.

# *Setting Up PROCOMM PLUS*

**IMPORTANT: If PCINSTAL reported successful completion of the installation process, most of the tasks outlined in this section have been already done by PCINSTAL. You should skip ahead to the section titled "Starting PROCOMM PLUS"! If you must perform an installation step manually, however, you'll find the major tasks PCINSTAL performs outlined below; once you've completed the necessary steps, skip ahead to "Starting PROCOMM PLUS".**

## Configuring Your Modem

Before you can start using PROCOMM PLUS, you need to make sure that your modem is set up properly. If you identified your modem during installation, PCINSTAL has already customized PROCOMM PLUS to work with your modem.

Preparing your modem depends on whether you have an *internal* modem (installed on a board inside your computer) or an *external* modem (separate from your computer).

## To set up an external modem

If you have not already connected your modem to your computer and to the telephone line, do so now—your modem manual describes how to do this.

Most modems have a set of switches that set certain operating characteristics for the modem. You'll need to check the setting of two of them in order to use all the features of PROCOMM PLUS.

Check your modem manual for information about these two switches (the manual may refer to them as "modem switches", "configuration switches", or "DIP switches"):

- **The CD (Carrier Detect) Switch.** This is switch 6 on most Hayes-compatible modems. Set this switch so that your modem controls the CD line (with the other setting of this switch, the CD line is not controlled by the modem).
- **The DTR (Data Terminal Ready) Switch.** This is switch 1 on most Hayes-compatible modems. Set this switch so that your modem monitors the status of the DTR line (with the other setting, the modem ignores the status of the DTR line). This switch setting speeds up the hang-up process when you select the appropriate PROCOMM PLUS command. If you don't set this switch this way, PROCOMM PLUS *can* hang up, but it will take a bit longer.

*Note If your modem doesn't have switches, it will have software commands you can use for the same purpose. Look in your modem's manual to find the commands that control CD and DTR (most modems use the commands &C1 and &D2), then include these commands in the modem's initialization command (see Chapter 8). If your modem accepts the &W command, type AT &C1 &D2 &W (in Terminal mode) and press* [Enter]*; your modem will store the new settings in its non-volatile memory). The &C1 tells your modem to follow the true state of the line with regards to CD, the &D2 does the same for DTR, and the &W writes this information to the modem's non-volatile memory. For more information about using the &W command, see your modem manual.*

### To set up an internal modem

If you have not already installed your modem in your computer and connected it to the telephone line, do so now—your modem manual describes how to do this.

An internal modem can be set to work on any of several "COM ports" (communications ports); think of a COM port as the "connection" between your modem and computer.

COM ports—also known as "serial ports"—are typically used for serial printers and mouse pointing devices (in addition to modems). If such a device is already connected to your computer, it's probably using one of your COM ports, and you won't be able to use that port for your modem. You should find out which COM port is used for that device, then make sure your modem is set to work on a different COM port (refer to your modem's manual for information about setting its COM port).

PROCOMM PLUS can work with any of eight COM ports—COM1 through COM8.

*Note If your modem has a CD or a DTR switch, set it as described above for an external modem. If it doesn't have these switches, check your modem's manual to see if there are software commands you can use for the same purpose. If there are, include these commands in the modem's initialization command (see Chapter 8).*

## Configuring Your Computer

To run PROCOMM PLUS most efficiently, you'll need to make sure that your CONFIG.SYS file and (if you're using a hard disk system) your AUTOEXEC.BAT file contain certain commands.

The AUTOEXEC.BAT and CONFIG.SYS files, if they exist, are located in the root directory of your boot disk. If you're not familiar with these files, consult your DOS manual or a book about DOS to see how to modify these files as recommended below. If you allowed PCINSTAL to modify these two files, then your hard disk has already been customized to work with PROCOMM PLUS.

**The DOS Search Path.** You can start PROCOMM PLUS from any directory on your disk by specifying the PCPLUS directory (the directory where you've installed PROCOMM PLUS) in your AUTOEXEC.BAT file's PATH command.

**The PCPLUS Environment Variable.** When PROCOMM PLUS needs to access or create files it uses for the Dialing Directory, the Setup facility, the keyboard mapping facility, Meta keys and the translation table (you'll learn about these later in this manual), it normally looks only in the current directory. If you want to keep these files in some other directory, specify that directory in a SET PCPLUS command in your AUTOEXEC.BAT file—PROCOMM PLUS will look for those files in that directory if it doesn't find them in the current directory.

For example, if you wanted to keep the PROCOMM PLUS files in the directory \COM\PCPLUS, you would include this command in your AUTOEXEC.BAT file:

```
SET PCPLUS=C:\COM\PCPLUS
```

If you have set this environment variable and later decide that you want to be able to keep multiple sets of the PROCOMM PLUS files, you can clear the environment variable by typing:

*set pcplus=*

at the DOS prompt and pressing [Enter].

**The FILES Command.** PROCOMM PLUS needs to access many files at the same time (the various files used by PROCOMM PLUS are listed in the Appendices at the back of this manual). To allow these files to be accessed, you should make sure that the FILES command in your CONFIG.SYS file is at least 25.

**The BUFFERS Command.** You can also specify a higher number of BUFFERS if you wish.

To speed up accessing your disk, include a BUFFERS command in your CONFIG.SYS file:

| | |
|---|---|
| BUFFERS=20 | if your computer is based on an 80286, 80386 or 80486 microprocessor. |
| BUFFERS=10 | if your computer is based on an 8088 or 8086 microprocessor. |

## Configuring PROCOMM PLUS

Although PROCOMM PLUS lets you change over 100 Setup parameters, the only thing you *must* do in order to get started is to identify the COM port PROCOMM PLUS will use (which you've already done in PCINSTAL). Chapter 8 describes how to change the other Setup parameters.

PCINSTAL has already customized PROCOMM PLUS for your modem (if your modem was one of those listed). If you switch to a new modem, PCINSTAL can customize PROCOMM PLUS for the new modem. Simply restart PCINSTAL by placing the the first distribution diskette in drive A and typing:

***a:pcinstal***

at the DOS prompt. Press [Enter] to begin.

If you're using a modem that wasn't listed as a choice during installation, you must give PROCOMM PLUS certain information about how your modem works. You can do this using the Setup facility (after you start PROCOMM PLUS). See your modem's manual to find out what PROCOMM PLUS needs to know, and see Chapter 8 to find out how to enter this information.

## *Starting PROCOMM PLUS*

### Starting PROCOMM PLUS on a hard disk system

- **Make sure the DOS prompt is showing on your screen.**
- **Type:**

  ***cd\pcplus***

(or the directory where you installed PROCOMM PLUS) and press [Enter].

- **Type:**

  ***pcplus***

and press [Enter].

The PROCOMM PLUS logo appears on your screen, and PROCOMM PLUS initializes your modem by sending it a string of commands.

- **Press any key to enter PROCOMM PLUS Terminal mode.**

PROCOMM PLUS enters Terminal mode—to proceed, see "The Terminal Mode Screen" in this chapter.

## Starting PROCOMM PLUS on a floppy disk system

Before you start PROCOMM PLUS for the first time, you should have made working copies of the PROCOMM PLUS disks (see "Installing PROCOMM PLUS").

- **Make sure the DOS prompt is showing on your screen.**
- **Insert your PROCOMM PLUS working disk (which you created during the installation process) into drive A.**
- **Type:**

  *pcplus*

**and press [Enter].**

The PROCOMM PLUS logo appears on your screen, and PROCOMM PLUS initializes your modem by sending it a string of commands.

- **Press any key to enter PROCOMM PLUS Terminal mode.**

PROCOMM PLUS enters Terminal mode—to proceed, see "The Terminal Mode Screen" in this chapter.

**IMPORTANT: If you're using a floppy disk system, PROCOMM PLUS will need to access the PROCOMM PLUS working disk in drive A. You must leave this disk in drive A while you are running PROCOMM PLUS.**

## Other Ways of Starting PROCOMM PLUS

You can add to the basic PROCOMM PLUS startup command to suit your particular hardware setup and personal preferences.

**If you're just starting with PROCOMM PLUS and you want to go on-line as quickly as possible, skip this information for now.**

You specify a particular way of starting PROCOMM PLUS by typing a "switch" after *pcplus* at the DOS prompt:

| Type ... | To ... |
|---|---|
| *pcplus /s* | Start PROCOMM PLUS so that it doesn't generate sounds when it opens or closes windows. If you *always* want to use PROCOMM PLUS without these sound effects, it's easier to turn them off using the Setup facility, as described in Chapter 8. |

| | |
|---|---|
| *pcplus /b* | Start PROCOMM PLUS so that it displays only in black and white, even on a color monitor.<br><br>You should use this switch if you're using a composite monochrome monitor with a color graphics display board. However, if you change the default colors to black and white using the Setup facility (see Chapter 8), you don't need to use the /b switch afterwards. |
| *pcplus /f*FILENAME | Start PROCOMM PLUS and immediately execute a script file whose name is specified. For example, entering *pcplus /fstartup* starts PROCOMM PLUS and executes the STARTUP.ASX script (or compiles the source program STARTUP.ASP, if STARTUP.ASX isn't found). Note that there must *not* be a space between the */f* and the script filename. For more information about script files, see Chapter 4. |

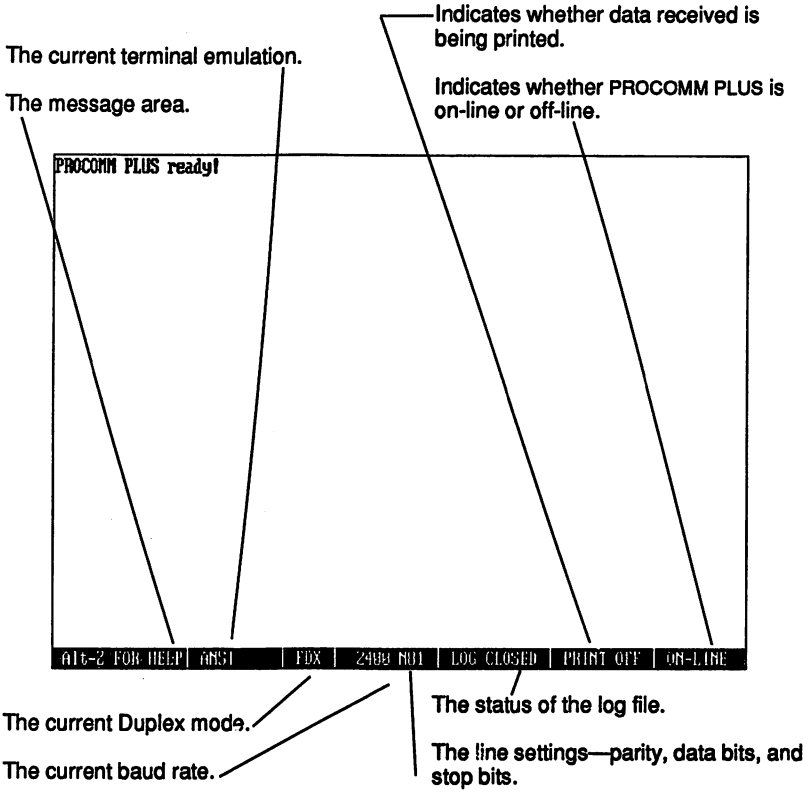
You can combine more than one switch (in any order) after *pcplus*. For example, you can start PROCOMM PLUS by entering:

***pcplus /s /b /fstartup***

at the DOS prompt and pressing [Enter].

# The Terminal Mode Screen

You can enter PROCOMM PLUS commands when PROCOMM PLUS is in "Terminal mode".




The bottom line of the screen is called the "Status line". You'll learn more about what's in the Status line later in this manual.

# *Using PROCOMM PLUS Commands*

You tell PROCOMM PLUS what you want to do by entering commands. PROCOMM PLUS accepts commands in two ways:

- You can enter a command directly using the [Alt] or [Ctrl] keys. You can enter *all* PROCOMM PLUS commands this way, and you can enter them at any time.
- You can enter a command from a Pull-down menu line that you can activate at the top of the screen. You can enter *most* PROCOMM PLUS commands this way, but only after you activate the Menu line. Commands are chosen from the Pull-down menus with your cursor keys; pressing [Enter] issues the command, while [Esc] returns you to the previous menu (or Terminal mode). You can also select a menu command by pressing the first character of the command name; if you're selecting a *submenu* (which displays another list of commands), you'll need to hold down the [Alt] key with the first letter of the submenu name. If you have a mouse, you can use it to call the menu line and select a command or submenu; press *either* mouse key in Terminal mode to display the menus, highlight your selection and press the *left* mouse button to enter it. Pressing the *right* mouse button while the pull-down menu line is active will return you to the previous menu (or Terminal mode).

## Using the [Alt] and [Ctrl] Keys

You enter a PROCOMM PLUS [Alt] or [Ctrl]-key command by holding down the [Alt] or [Ctrl] key while you press the appropriate function or letter key. For example, here's how to enter the [Alt]-[Z] command, which displays the Command Menu (a list of all the other [Alt]-key commands):

- **Hold down the [Alt] key and press the [Z] key.**

```
                PROCOMM PLUS COMMAND MENU

          ---------> COMMUNICATIONS <---------------------> SET UP <---
 ------ BEFORE ------------------- AFTER ------------  Setup Facility .. Alt-S
 Dialing Directory Alt-D   Hang Up ......... Alt-H    Line/Port Setup . Alt-P
                           Exit ............ Alt-X    Translate Table . Alt-W
 ------ DURING ------------------------------------   Key Mapping .... Alt-F8
 Script Files ... Alt-F5   Send Files ....... PgUp   ---> OTHER FUNCTIONS <---
 Meta Keys ....... Alt-M   Receive Files .... PgDn   File Directory .. Alt-F
 Redisplay ...... Alt-F6   Log File On/Off  Alt-F1   Change Directory Alt-F7
 Clear Screen .... Alt-C   Log File Pause . Alt-F2   View a File ..... Alt-V
 Break Key ....... Alt-B   Screen Snapshot . Alt-G   Editor .......... Alt-A
 Elapsed Time .... Alt-T   Printer On/Off .. Alt-L   DOS Gateway .... Alt-F4
 ------ OTHER ------------------------------------   Program Info .... Alt-I
 Chat Mode ....... Alt-O   Record Mode ..... Alt-R   Clipboard ....... Alt-=
 Host Mode ....... Alt-Q   Duplex Toggle ... Alt-E   Monitor Mode ... Ctrl-\
 Auto Answer ..... Alt-Y   CR-CR/LF Toggle  Alt-F3   Toggle Status .. Ctrl-]
 Init Modem ...... Alt-J   Kermit Server Cmd Alt-K   Toggle Lines ... Ctrl-_
 Reset Terminal .. Alt-U   Screen Pause .... Alt-N   Pulldown Menu Key ...

                         Press Alt-Z for On-Line Help
```

You can enter nearly all of the commands listed on the Command Menu the same way you entered the [Alt]-[Z] command—by holding down [Alt] while you press the other key. As you can see on the menu, the exceptions are [PgUp] or [PgDn] (for which you don't need to hold down the [Alt] key) and [Ctrl]-[\], [Ctrl]-[]] and [Ctrl]-[-] (for which you hold down the [Ctrl] key).

*Note Throughout the rest of this manual,* [Alt]*-key and* [Ctrl]*-key combinations will be shown like "*[Alt]-[Z]*".*

You can display the Command Menu whenever you need to find out what command to use. However, you can enter a command using [Alt] or [Ctrl] at any time in Terminal mode, regardless of whether not the Command Menu is displayed on your screen.

*Note The Command Menu is part of the* PROCOMM PLUS *Help facility. Pressing* [Alt]-[Z] *displays information about whatever you're doing; for example, if you were to press* [Alt]-[Z] *now (with the Command Menu on the screen),* PROCOMM PLUS *would display help information about Terminal mode. You can also select any topic or search for a line of text within the Help facility.*

To clear the Command Menu from your screen:

- Press [Esc].

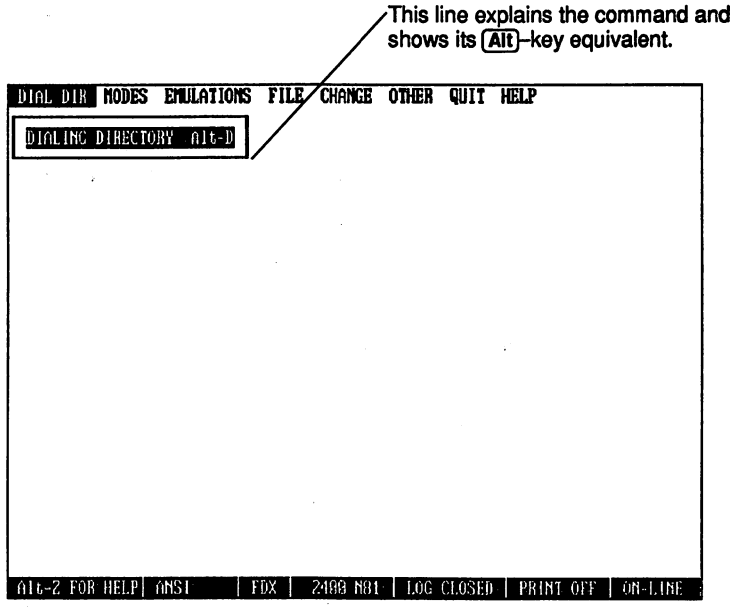
## Using the Pulldown Menu Line

Before you can use the pulldown Menu line to give PROCOMM PLUS a command, you must "activate" it; this can be done from either the keyboard or the mouse.

To activate the Menu line from the keyboard:

- **Press [~].**

  On most keyboards, this is the key that has the tilde (~) above it.




To activate the Menu line with the mouse:

- **Press either mouse button.**

You can select a command from the Menu line in three ways:

- By holding down [Alt] and pressing the first letter of the submenu or command. If you selected a submenu (such as FILE), you can then choose a command by pressing the first letter of the command and pressing [Enter].
- By highlighting the command (using the [→] and [←] keys) and pressing [Enter]. If you selected a submenu, use the [↓] and [↑] keys to highlight the command and press [Enter].
- By highlighting the command (using the mouse) and pressing the *left* button.

Unlike the similar-looking Menu line in some other programs, the PROCOMM PLUS Menu line disappears as soon as you select a command. To deactivate the Menu line without selecting a command:

- **Press [Esc].**

You'll see how to use the Menu line in a moment, when you specify the COM port your modem is using.

If you want to use a key other than [`] for activating the Menu line, you can specify that key using the Setup facility. Also, if you don't want to use the Menu line at all, you can disable it using the Setup facility. For more information, see "General Options" in Chapter 8.

## *Specifying Your Modem's COM Port*

Before you can go on-line, you need to tell PROCOMM PLUS which COM port your modem is using. Although PCINSTAL has already configured PROCOMM PLUS with the COM port you specified during installation, the COM port is one of the communications parameters you might have to change from time to time; therefore, we'll use it to demonstrate the Pulldown Menu line in action.

You could do this by pressing [Alt]-[P], but here you'll use the Menu line so that you learn how it works.

Begin by activating the Menu line:

- **Press [`].**

To specify the COM port, you first need to select the CHANGE submenu. You could select this command by pressing [Alt]-[C] or using the mouse; instead, highlight the command with the cursor keys.

- **Press ⊕ four times (or [Alt]-[C]) to highlight the CHANGE command.**

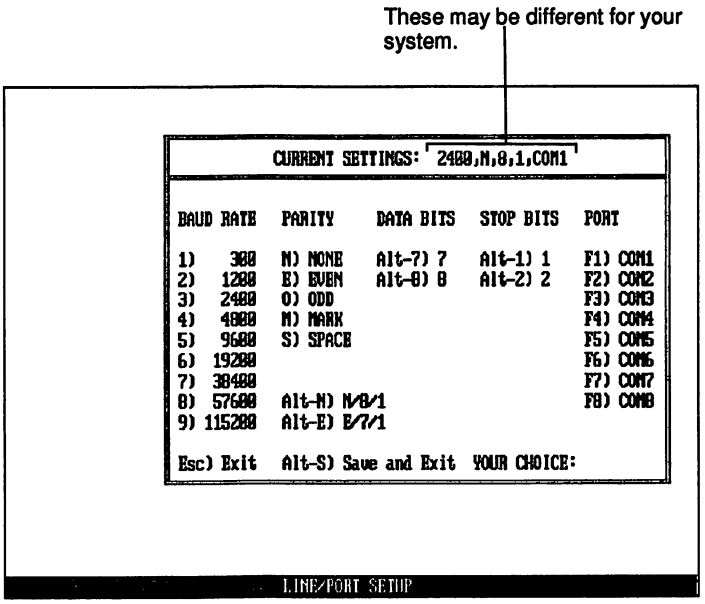
These appear on the Menu line after you select Change.

```
DIAL DIR  MODES  EMULATIONS  FILE  CHANGE  OTHER  QUIT  HELP

                    SETUP              Alt-S
                    LINE SETTINGS      Alt-P
                    META KEYS          Alt-M
                    TRANSLATION        Alt-W
                    DIRECTORY          Alt-F7
                    ECHO (DUPLEX)      Alt-E
                    KEY MAPPING        Alt-F8
                    TOGGLE CR-CR/LF    Alt-F3
                    TOGGLE STATUS      Ctrl-1
                    TOGGLE LINES       Ctrl-—

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

You need to select the Line Settings command from this Menu line. Select the command by typing its first letter:

- **Press [L] and [Enter] to select the Line Settings command.**

  PROCOMM PLUS displays the Line Settings screen.




If the COM port you're using is not the one displayed at the top of the screen:

- **Press the function key, F1 through F8, shown next to the COM port your modem is using.**

  The COM port you've chosen appears at the top of the screen.

To save the change you've made and close the Line Settings screen:

- **Press Alt-S.**

  PROCOMM PLUS clears the screen.

## *Exiting PROCOMM PLUS*

To exit PROCOMM PLUS and return to DOS:

- **Press Alt-X.**

  PROCOMM PLUS asks you to confirm that you want to exit and return to DOS.

- **Press Y to confirm that you want to exit.**

If PROCOMM PLUS asks whether you want to HANGUP LINE, your modem is telling PROCOMM PLUS that it's connected with another computer! The reason might be that your modem's CD switch was not set properly during installation—see "Setting Up Your Modem" earlier in this chapter. Other reasons for this prompt could be that you've chosen a serial port that has no device attached to it, or that the port is directly connected to another computer via a null-modem cable.

You're finished setting up PROCOMM PLUS! You can go on-line with the tutorial in the next chapter of this manual.

## *If You Have a Problem*

1. Make sure your system meets the minimum requirements described under "What You'll Need" in this chapter.
2. Make sure your computer, your modem and the cables that connect them are working properly.
3. If you don't find a solution by reading elsewhere in this manual, look for a solution to your problem in the appendix titled "Common Questions" at the back of this manual. This section can provide you with additional information that can help you solve your particular problem.
4. Make sure you are not running software that conflicts with PROCOMM PLUS. The appendix "Checking for Software Conflicts" at the back of this manual describes how to determine if you're experiencing a problem with other software.

If the steps above don't help you find a solution to your problem, you can contact DATASTORM's Technical Support department for help. We maintain a support forum on the CompuServe Information Service specifically to answer your questions about PROCOMM PLUS; just type "GO DATASTORM" at any CompuServe prompt!

Your purchase of PROCOMM PLUS also entitles you to unlimited voice-line Technical Support calls.

**Note** *Be sure to send in your PROCOMM PLUS Registration Card. DATASTORM must have your Registration Card on file in order to provide you with technical support.*

When you call, give DATASTORM's Technical Support specialist the serial number of your copy of PROCOMM PLUS, which you can find on the Information screen in Terminal mode (press Alt-I).

To get help more quickly, turn on your computer and start PROCOMM PLUS before you call. You should be ready to give the DATASTORM technical-support specialist the following information in addition to your serial number:

- The version of PROCOMM PLUS you're using (if you don't know, press (Alt)-(I)) in Terminal mode to invoke the Program Information screen.
- The brand and model number of your computer.
- The amount of RAM memory in your computer.
- The version of DOS you're using.
- The brand and model number of your modem.
- The brand and model number of your graphics adapter and monitor.
- The brand and model number of your printer.

Also, be prepared to answer the following questions:

- Have you ever been able to get PROCOMM PLUS to work correctly before? If so, has anything in your computer system (hardware or software) changed since then?
- Can you duplicate the series of steps that results in your problem?
- Did an error message appear? If so, what did it say?

You can reach DATASTORM's Technical Support department, Monday through Friday between 9 am and 5 pm Central Time, at (314) 875-0530.

CHAPTER

# 2

# Going On-Line

In this chapter, you'll learn how to:

- Enter information in PROCOMM PLUS' Dialing Directory about a computer you'll be calling.
- Connect to the computer.
- Log a record of the information that the other computer displays on your screen.

To begin the tutorial, start PROCOMM PLUS again:

- **At the DOS prompt, type *pcplus*, then press [Enter].**
- **When you see the PROCOMM PLUS banner, press [Enter] for Terminal mode.**

# *Displaying the Dialing Directory*

You begin connecting to a remote computer by instructing your modem to call the telephone number for that computer. PROCOMM PLUS lets you keep the telephone numbers of other computer systems in a "Dialing Directory".

To display the Dialing Directory:

- **Press** (Alt)-(D).

Here's where you'll enter the names and numbers.

The line settings.

```
DIALING DIRECTORY: PCPLUS.DIR

   NAME                                    NUMBER   BAUD PDS D P  SCRIPT
 1                                                  2400 N81 F D
 2                                                  2400 N81 F D
 3                                                  2400 N81 F D
 4                                                  2400 N81 F D
 5                                                  2400 N81 F D
 6                                                  2400 N81 F D
 7                                                  2400 N81 F D
 8                                                  2400 N81 F D
 9                                                  2400 N81 F D
10                                                  2400 N81 F D

PgUp Scroll Up     Space Mark Entry     C Clear Marked     L Print Directory
PgDn Scroll Dn     Enter Dial Selected  E Erase Entry(s)   P Dialing Codes
Home First Page    D Dial Entry(s)      F Find Entry       X Exchange Dir
End Last Page      M Manual Dial        N Find Next        T Toggle Display
↑/↓ Select Entry   A Add Entry          G Goto Entry       S Sort Directory
Esc Exit           R Revise Entry       J Jot Notes

Choice:

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | OFF-LINE
```

You'll note that much of the Dialing Directory screen contains information about communicating with the other computer:

- The "baud rate" for each entry tells PROCOMM PLUS what speed to use for communicating with the other computer.
- The line settings essentially tell PROCOMM PLUS *how* to communicate; they include the parity, the number of data bits and the number of stop bits to use when calling each system. You'll recognize these fields from the Line Settings menu screen you used in the last chapter.
- The entry under D is the Duplex mode. PROCOMM PLUS knows from this field if your connection will be Full or Half duplex.
- The P field identifies the COM port to use when calling each system.

PROCOMM PLUS has entered "default" values (settings that are commonly used but can be changed) for these items on each entry line. Depending on your answers during the installation process, the default specifications in *your* Dialing Directory may be different from those shown in the illustration.

We'll learn more details about these communications settings later in this manual.

## *Adding an Entry*

You select an entry in the Dialing Directory by highlighting the line where it appears. Right now, line 1 is highlighted.

You can move the highlight to other entry lines using the ⬇ and ⬆ keys:

- **Press ⬇.**

  The highlight moves to the next line.

- **Press ⬆.**

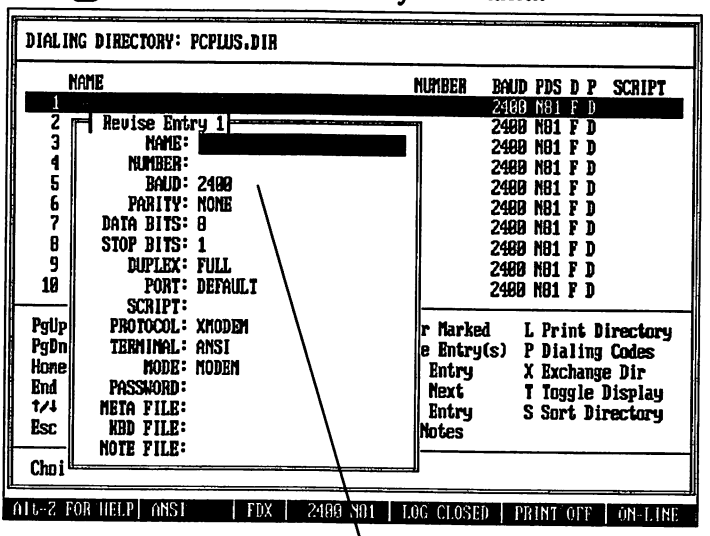
  The highlight moves back to the previous line.

*Note If you're using a mouse, you can also select an entry by moving your mouse up or down. Additionally, your left mouse button acts as the* [Enter] *key throughout the Dialing Directory.*

In this chapter you'll be connecting with a BBS (Bulletin Board System) on a DATASTORM TECHNOLOGIES computer. A BBS is a computer running a host program; most bulletin boards allow you to transfer files or leave public messages (others even feature on-line games or on-line shopping).

You'll begin by adding DATASTORM's BBS as the entry on line 1.

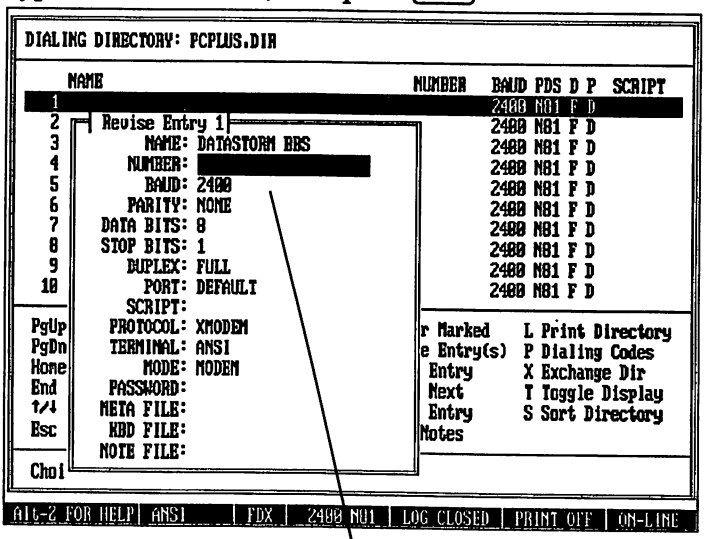
- **Press (R) to select the Revise Entry command.**




PROCOMM PLUS is ready for you to enter the NAME for this entry.

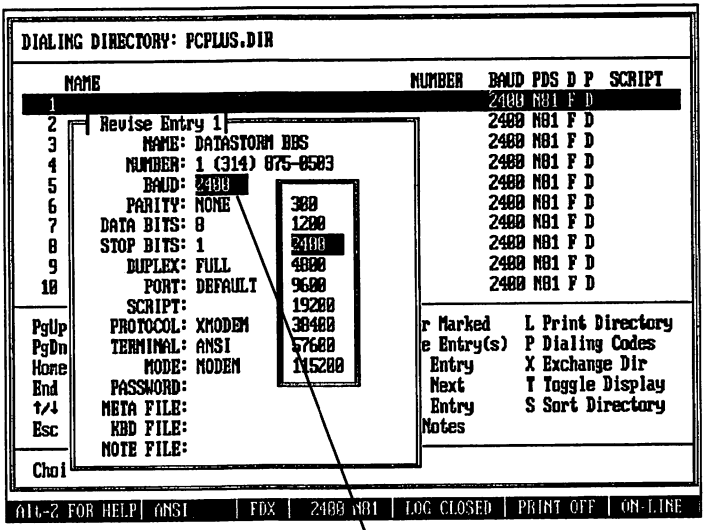
The "Revision window" now shows the current values for the entry on line 1.

- **Type *DATASTORM BBS*, then press (Enter).**




PROCOMM PLUS is ready for you to enter the NUMBER.

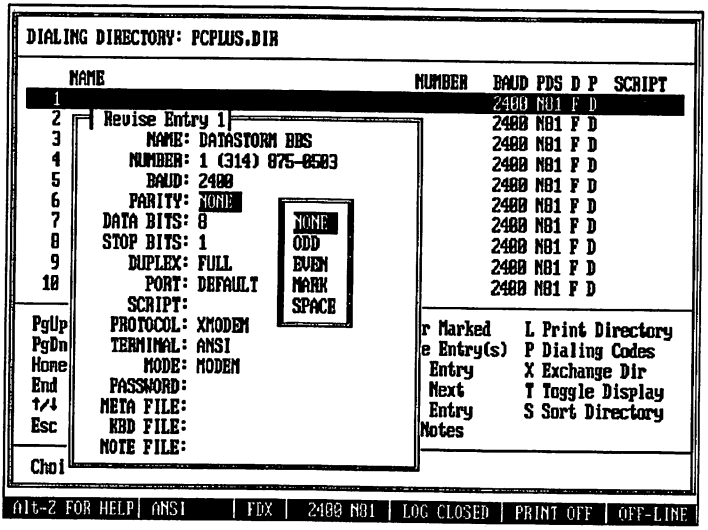
- **Type *1 (314) 875-0503* and then press (Enter).**




PROCOMM PLUS is ready for you to enter the BAUD RATE.

Now you need to tell PROCOMM PLUS what baud rate to use for communicating with DATASTORM's BBS. In general, you should enter the fastest baud rate at which both your modem and the system you're calling can operate. The DATASTORM BBS can operate at 300, 1200, or 2400 baud (9600 baud is available on certain dedicated numbers); refer to your modem's manual to determine its maximum baud rate.

- **If necessary, highlight your modem's maximum baud rate (but not greater than 2400) by either typing the first number in the baud rate, or by pressing ↓ or ↑.**
- **Press Enter.**




PROCOMM PLUS is now ready for you to specify the parity and the other line settings. DATASTORM's BBS requires PARITY be set to None, a DATA BITS setting of 8 and a STOP BITS setting of 1.

If these settings are already highlighted, you can accept them quickly by simply pressing Enter in each of the next three steps, or by pressing Tab to jump to the next field.

- **If the setting next to PARITY is not NONE, press N to highlight it in the list of parity options and press Enter.**

  PROCOMM PLUS highlights the setting next to DATA BITS.

- **If the setting next to DATA BITS is not 8, type *8* and press Enter.**

  PROCOMM PLUS highlights the setting next to STOP BITS.

- **If the setting next to STOP BITS is not 1, type *1* and press Enter.**

  PROCOMM PLUS highlights the setting next to DUPLEX.

To communicate with DATASTORM's BBS (and most other bulletin board systems), you'll use FULL DUPLEX mode:

- **If the DUPLEX value is not FULL, press [F] to highlight FULL in the list of duplex options and press [Enter].**

  PROCOMM PLUS now moves the cursor and the highlight next to PORT.

  During the installation process, you identified a default COM port (which you'll be using for the majority of your calls). However, many PCs have more than one COM port; this field can specify another port (in the range COM1 through COM8) to use for this entry. For our tutorial, we'll use the default COM port.

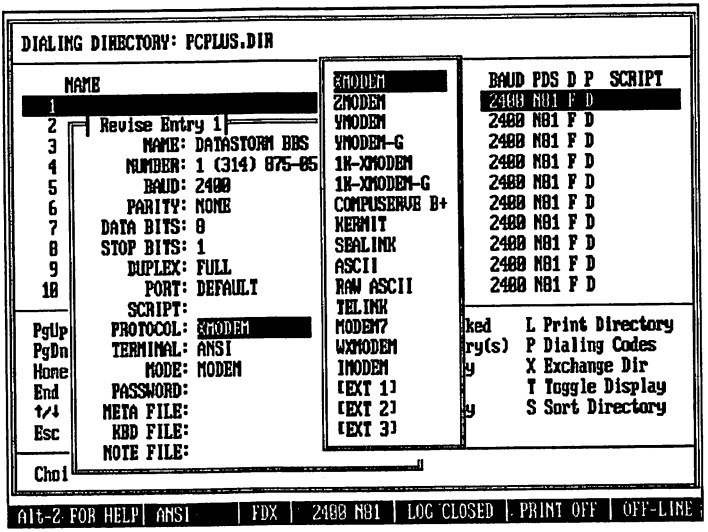
- **Press [Enter] to select the default COM PORT.**

  The highlighted cursor next moves to the SCRIPT field.

  You could now specify a "script file", which can automate a PROCOMM PLUS session. You'll learn more about using a script file in Chapter 4; for now, leave this part of the entry blank.

- **Press [Enter] or [Tab] to omit a script file.**

  PROCOMM PLUS asks for the PROTOCOL to use for this entry.




The "protocol" controls how data files are sent and received between your computer and the other computer. For the DATASTORM BBS, use XMODEM, which is the most common protocol used for data transmission.

- **If the PROTOCOL field isn't XMODEM, press [X] to highlight it in the list of protocol options, then press [Enter].**

  PROCOMM PLUS now asks for the TERMINAL emulation to use with this entry.

Terminal emulation will be of interest only if you'll be communicating with a computer that expects you to be using one of these terminals (rather than a personal computer); PROCOMM PLUS' emulation can make your PC "act" just like many popular terminals. For the DATASTORM BBS (and most other bulletin board systems), use the ANSI terminal emulation.

- **PROCOMM PLUS displays a shortened list of the available terminal emulations (grouped by type). If the VT/ANSI group is not highlighted, press the [V] key to highlight it and press [Enter]. A submenu appears of the VT/ANSI group; press [A] to highlight ANSI in the list of terminal options and press [Enter].**

  PROCOMM PLUS now prompts for the connection MODE it will use for this entry.

Computers can communicate over both modems and direct cable connections (usually called "null modem" cables). If the host system were directly connected, you would select DIRECT mode; this prevents PROCOMM PLUS from sending unnecessary modem control strings. For all calls that you make through a modem, you'll use MODEM mode.

- **If the MODE field isn't set to MODEM, press [M] to highlight it and press [Enter].**

  The highlighted cursor now moves to the PASSWORD field.

The PASSWORD field can contain your logon password for this remote system. Typically, it acts only as a reminder; it's easy to forget a password if you call many systems often! However, an ASPECT script can also read this field, so you can use it in scripts that you write later. For now, we'll leave it blank.

**IMPORTANT: The PASSWORD field is provided as a convenience for the home or casual user with no need for security. Because the PASSWORD field is openly displayed (without being encrypted), it should not be considered secure, and should not be used by those desiring a secure system.**

- **Press [Enter] at the PASSWORD field.**

  Next, the highlighted cursor moves to the META FILE field.

PROCOMM PLUS features 10 "multi-purpose" *Meta keys* that can store and send a series of characters, run external programs or run ASPECT scripts. This field names the Meta key file for this entry. We'll leave it blank for now.

- **Press [Enter] or [Tab] at the META FILE field.**

  Next, the highlighted cursor moves to the KBD FILE field.

PROCOMM PLUS allows you to "redefine" the keys on your keyboard with a *Keyboard File*; for example, you could assign the function performed by your [Delete] key to the [Backspace] key. Keyboard remapping is often used within terminal emulations to provide special keyboard layouts. Since you won't require such a custom keyboard layout for a bulletin board, leave this field blank.

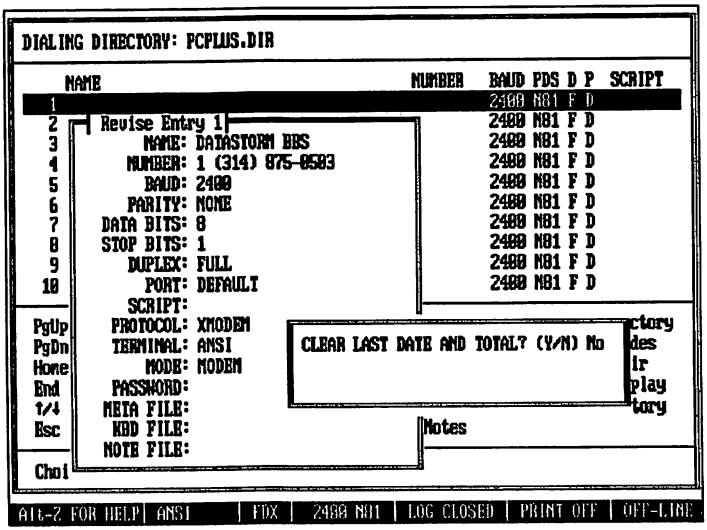
- **Press [Enter] at the KBD FILE field.**

  The highlighted cursor moves to the NOTE FILE field.

You can jot "notes" for each entry in your Dialing Directory; the notes can be any text information you want to save about this remote system. PROCOMM PLUS saves these reminders in a *Note file* (each Note file ends in the extension *.NOT*). You can specify a different Note file for each entry or use the same Note file for all entries in this directory. For now, leave this field blank.

- **Press [Enter] at the NOTE FILE field.**

The prompt CLEAR LAST DATE AND TOTAL? appears in the Revision area.



PROCOMM PLUS keeps track of the last date and the number of times you called each entry. This prompt lets you erase that information for this entry.

- **Press [Y] or [N].**

  In this case, it doesn't matter which key you press; you haven't called this entry yet!

The prompt ACCEPT THIS ENTRY? appears in the revision area.

- **Press [Y].**

  If you press [N] (which you should if you've made a mistake), PROCOMM PLUS lets you begin revising this entry again.

The prompt SAVE ENTRY TO DISK? appears in the Revise Entry window. If you were making a temporary change to an already-existing entry (for instance, changing the Keyboard file for just this call), you could press [N]. Since you're creating a new entry, you'll want to save it to the PCPLUS.DIR file on disk.

- **Press [Y].**

  PROCOMM PLUS saves the entry and closes the Revise Entry window.

Your screen should look like this:

```
DIALING DIRECTORY: PCPLUS.DIR

   NAME                                  NUMBER   BAUD PDS D P  SCRIPT
 1 DATASTORM BBS                 1 (314) 875-8583  2400 N81 F D
 2                                                 2400 N81 F D
 3                                                 2400 N81 F D
 4                                                 2400 N81 F D
 5                                                 2400 N81 F D
 6                                                 2400 N81 F D
 7                                                 2400 N81 F D
 8                                                 2400 N81 F D
 9                                                 2400 N81 F D
10                                                 2400 N81 F D

PgUp Scroll Up    Space Mark Entry    C Clear Marked    L Print Directory
PgDn Scroll Dn    Enter Dial Selected E Erase Entry(s)  P Dialing Codes
Home First Page   D Dial Entry(s)     F Find Entry      X Exchange Dir
End Last Page     M Manual Dial       N Find Next       T Toggle Display
↑/↓ Select Entry  A Add Entry         G Goto Entry      S Sort Directory
Esc Exit          R Revise Entry      J Jot Notes

Choice:

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | OFF-LINE
```

# Making the Connection

You can dial the highlighted entry by pressing Enter:

- **Press Enter to dial the DATASTORM BBS.**

  PROCOMM PLUS opens the Dialing Window and dials the DATASTORM BBS.

```
DIALING DIRECTORY: PCPLUS.DIR

   NAME                                  NUMBER   BAUD PDS D P  SCRIPT
 1 DATASTORM BBS                 1 (314) 875-8583  2400 N81 F D
 2                                                 2400 N81 F D
 3                                                 2400 N81 F D
 4                                                 2400 N81 F D
 5                                                 2400 N81 F D
 6                                                 2400 N81 F D
 7                                                 2400 N81 F D
 8                                                 2400 N81 F D
 9                                                 2400 N81 F D
10                                                 2400 N81 F D

     DIALING: DATASTORM BBS                LAST CONNECTED ON: 00/00/00
      NUMBER: 1 (314) 875-8583           TOTAL COMPLETED CALLS: 0
 SCRIPT FILE:                              WAIT FOR CONNECTION: 45  SECS
   LAST CALL:                              PAUSE BETWEEN CALLS: 4   SECS
 PASS NUMBER: 1                          TIME AT START OF DIAL: 08:30:06PM
ELAPSED TIME: 7                     TIME AT START OF THIS CALL: 08:30:07PM

Choice:   Space Recycle  Del Remove from list  End Change wait  Esc Abort

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

When the BBS answers the call, a CONNECT message appears here.

If your modem has a speaker (and if it's enabled), in a few seconds you'll hear PROCOMM PLUS dial DATASTORM's BBS.

*Note* *If the line is busy, PROCOMM PLUS redials repeatedly until a connection is made. If you don't hear a dial tone through your speaker, your system probably is not set up correctly; see "Dialing Problems" in the appendix titled "Common Questions".*

The DATASTORM BBS then displays this screen:

```
WELCOME TO THE DATASTORM DISTRIBUTION BBS

NOTICE:  The BBS numbers are:

  (314) 875-0503 (2400 bps MNP-Level 5)
  (314) 875-0600 (2400 bps)
  (314) 875-0523 (9600 bps V.32 & HST)

The DATASTORM switchboard number is (314) 443-3282 [443-DATA].

When logging on, please use your real name. This board is open -- you
will be prompted to give yourself a password for future logons.

We encourage all users to continue their requests for technical support
on the CompuServe Information Service. Registered users of PROCOMM PLUS
are encouraged to phone our technical support department for help.

COMPUSERVE:  To access the DATASTORM support section after logon, type
"GO DSTORM" to enter the DATASTORM forum, and type "JOIN" if you have
not already done so.  "RTN" allows you to read new message threads.

First Name? _
Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

The BBS prompts you to enter your first name.

From this point on in the tutorial, the tasks you'll perform relate to the use of the DATASTORM BBS rather than PROCOMM PLUS. What appears on your screen may differ slightly from what's shown in the screen illustrations on the following pages (if the DATASTORM BBS has been modified since this manual was printed).

When you connect to another BBS, the log-on process may be different in some details, but the major steps will probably remain the same.

- **Type your first name and press [Enter].**

```
NOTICE:  The BBS numbers are:

  (314) 875-0503 (2400 bps MNP-Level 5)
  (314) 875-0608 (2400 bps)
  (314) 875-0523 (9600 bps V.32 & HST)

The DATASTORM switchboard number is (314) 443-3282 [443-DATA].

When logging on, please use your real name. This board is open -- you
will be prompted to give yourself a password for future logons.

We encourage all users to continue their requests for technical support
on the CompuServe Information Service. Registered users of PROCOMM PLUS
are encouraged to phone our technical support department for help.

COMPUSERVE:  To access the DATASTORM support section after logon, type
"GO DSTORM" to enter the DATASTORM forum, and type "JOIN" if you have
not already done so.  "RIN" allows you to read new message threads.



First Name? @FRED
Last Name?
 Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

The BBS prompts you to enter your last name.

- **Type your last name, then press [Enter].**

```
NOTICE:  The BBS numbers are:

  (314) 875-0503 (2400 bps MNP-Level 5)
  (314) 875-0608 (2400 bps)
  (314) 875-0523 (9600 bps V.32 & HST)

The DATASTORM switchboard number is (314) 443-3282 [443-DATA].

When logging on, please use your real name. This board is open -- you
will be prompted to give yourself a password for future logons.

We encourage all users to continue their requests for technical support
on the CompuServe Information Service. Registered users of PROCOMM PLUS
are encouraged to phone our technical support department for help.

COMPUSERVE:  To access the DATASTORM support section after logon, type
"GO DSTORM" to enter the DATASTORM forum, and type "JOIN" if you have
not already done so.  "RIN" allows you to read new message threads.



First Name? @FRED
Last Name? GARVIN
Calling from (City,State)?
 Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

The BBS prompts you to enter your city and state.

***Note*** *If someone with the same name has already logged on to this BBS, the prompt will show that person's city and state (rather than ask you for your city and state). If this happens, press [N], then re-enter your name differently, such as by using a nickname, your middle name or just an initial letter.*

- **Type your city and state, then press [Enter].**

  The BBS asks you to confirm what you typed for your name and location.

- **Press [Y] if what's displayed is correct.**

  The BBS asks you for your Terminal Width (the number of characters your computer can display on a line).

- **Type *80*, then press [Enter].**

  The BBS displays a menu of terminals and asks you to specify which terminal you're using.

- **Press [F] to select IBM PC.**

  The BBS displays certain default characteristics of your computer and PROCOMM PLUS, and asks if you want to change them.

Your system works as this BBS expects, so you can leave these values unchanged:

- **Press [N].**

  The BBS asks if you want it to pause after displaying a full screen of data.

- **Press [Y].**

  The BBS asks how many lines you'd like for each display page. This will pause the display of each screen of text so you can read information before it scrolls off the screen; when you see the "[more]" prompt appear, press [Enter] to continue.

- **Type 24, then press [Enter].**

  The BBS asks you to enter a 1 to 8-character password, which you'll use to log on in the future. It's a good idea to record your passwords and store them in a secure place; of course, when security is not that important (if you're calling from your home, for example), you can also store your password in the Dialing Directory PASSWORD field.

- **Type a password of 1 to 8 characters, then press [Enter].**

  The BBS displays some information for you as a first-time user and then displays its Main Menu.

```
DATASTORM DISTRIBUTION BBS

TOP MENU

Goodbye, Time, Customize

Download PROCOMM PLUS Test Drive (use binary protocol)
Logon Scripts — Easy access to Compuserve for tech support

Version Information
Newsletters #1: Spring 1989, #2: Spring 1990
Ordering Information

File Section
Message Board — User to user support
Problems/Troubleshooting help --Keyword search
Help with this BBS

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

## *Logging Data from Your Screen*

When you're connected to another computer, you may want to record information it sends that appears on your display—for instance, "electronic mail" or other messages. PROCOMM PLUS lets you record what appears on your screen (including what you type to the other computer, as well as information the other computer sends to you). To do this, you open a "log file".

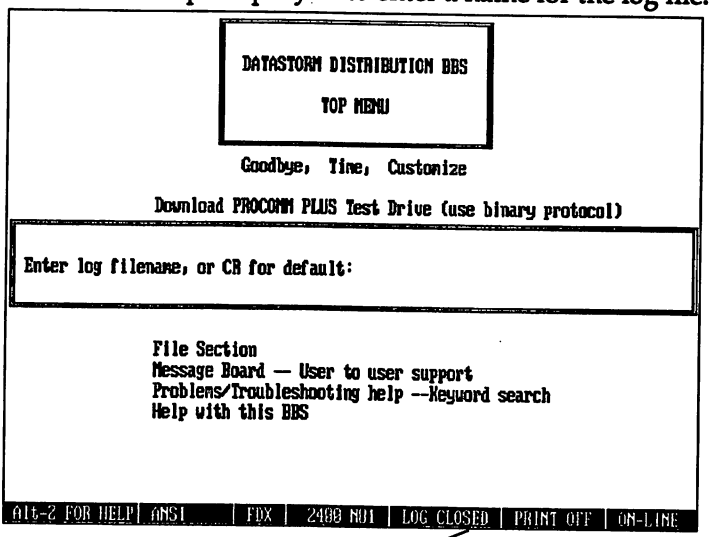
*Note* *An alternate to the log file is the Redisplay command, which can display text that has already scrolled off your screen! We'll cover Redisplay later in this manual.*

In a moment you'll read a bulletin that's "posted" on the BBS. By opening a log file before you start reading the bulletin, you could read it later at your leisure, edit it with your word processor or print it.

To open a log file:

- **Press [Alt]-[F1].**

  PROCOMM PLUS prompts you to enter a name for the log file.




After you press [Enter], this will change to LOG OPEN.

- **Type *version.log* and press [Enter].**

Like most bulletin boards, on the DATASTORM BBS you select a command by typing its first letter. Let's select the Version Information command from the BBS menu:

- **Press [V].**

  The BBS displays a bulletin about current versions of DATASTORM products. Remember, when you see the **[more]** prompt:

- **Press [Enter] to continue.**

Now, close the log file:

- **Press** Alt-F1.

  The Status line shows that the log file is closed.

In the next chapter, you'll learn how to transfer a file from the DATASTORM BBS to your computer.

CHAPTER

# 3

# Downloading a File

In this chapter, you'll learn how to:

- Download a file from the DATASTORM BBS ("downloading" a file means receiving it from the other computer, while sending a file *to* the other computer is called "uploading"). When you download a file from another computer, a copy of the file on that computer is sent to your computer and stored for you to use.
- Read the file you've downloaded without exiting PROCOMM PLUS.

Downloading a file involves two procedures:

- Telling the BBS that you want to download a file (which includes specifying which file you want to download and which file transfer protocol to use).
- Telling PROCOMM PLUS the same information.

## To begin this chapter

- If you're not already connected to the DATASTORM BBS, follow the procedures in the previous chapter until the BBS's Main Menu is on your screen.

# Telling the BBS to Download the File

The DATASTORM BBS includes a number of files that you can download. In this chapter, you'll download a file called ONLINE.DOC, which contains a general introduction to bulletin board use.

Before beginning the download procedure in PROCOMM PLUS, you need to tell the BBS that you want to download the file. From the BBS Main Menu:

- **Press (F) to select the Files Section.**

  The BBS displays its File Transfer Menu.

- **Press (D) to download files.**

- **Press (U) to select User-provided files.**

  The BBS displays a listing of the files you can download. Don't worry if the list "scrolls" (you'll learn later how to pause a screen). The file listing should look similar to this:

```
READ131.ARC    11648  Store command line input to envir. varia (10-06-89)
REORG100.ARC   34857  Dialing Directory organizer              (03-29-89)
RS232OFF.ARC    4341  Help for COM1/COM3 - COM2/COM4 conflict  (06-12-87)
SCICALC.EXE     9542B Math Conversion Program (self-extracting (12-06-89)
SCRCALC.ARC    12544  Small TSR calculator                     (10-06-89)
SD161.EXE      7601B  StupenDOS 16.1 Shell UNZIP/ZIP "FAST"!   (11-13-89)
SERCBL2.ARC     4372  Serial cable pin information             (10-16-88)
SETMODEM.ARC    4096  Send AT commands to modem from DOS       (05-15-87)
SUMMLOG.ARC    20601  Calculates amounts from phone log        (08-07-88)
TDLOGITC.ARC    2688  PROCOMM+ Test Drive Logitech driver       (07-17-88)
TED.ZIP        27924  Yet another small editor                 (08-11-89)
THEDRW33.ZIP  166637  ANSI Draw program                        (04-05-90)
TRANSLAT.ARC   18638  ASCII to EBCDIC and vice versa           (07-05-88)
TURBOKEY.COM     512  Change typomatic rate on AT keyboard     (04-05-90)
VA212A.SET      1246  Modem setup for Racal-Vadic VA212        (06-19-87)
VFONT436.ARC    9856  4 screen fonts, VGA only, Mem. resident  (04-06-89)
VPT350.ARC     36096  Video Palette Tool - for VGA displays on (10-06-89)
Z4PCPL.ARC      1152  ZMODEM setup help under PCPLUS           (12-22-88)
ZAPCODE.EXE    66288  Printer control code utility             (04-05-90)
ZBUDDY.ZIP     45184  Front-end shell for ZMODEM               (04-05-90)
PROMNU.ARC      2137  Mouse menu for PCPLUS (04-18-90)

<D>ownload, <P>rotocol, <E>xamine, <M>eu, <H>elp, or <L>ist
Selection or <CR> to exit:
Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

When you see this prompt, you can indicate the file you want.

- **Press (D), then press (Enter).**

- **Type *online.doc* and press [Enter].**

The BBS displays this screen:

```
MNP-9.ARC        6631  MNP Documentation to level 9              (08-24-88)
MODEMDR.ZIP     43008  Powerful test and display of modem/UART   (04-05-90)
MT224EHB.DOC    34304  Setup help doc for MultiTech 224E MNP     (04-20-89)
MURPHY.EXE      30080  Displays set of "Murphy's Law" quotes     (01-01-80)
NONOISE.ARC      4096  Hardware modem noise killer                (08-06-88)

<D>ownload, <P>rotocol, <E>xamine, <N>ew, <H>elp, or <L>ist
Selection or <CR> to exit: D

File Name? ONLINE.DOC

Select from the following transfer protocols:

1 - TYPE file to your screen
2 - ASCII with DC2/DC4 Capture
3 - ASCII only, no Control Codes
4 - XMODEM
5 - YMODEM/YMODEM-g
6 - YMODEM/YMODEM-g Batch
7 - SEAlink
8 - KERMIT
9 - SuperKERMIT (Sliding Windows)

Choose one (Q to Quit):
 Alt-Z FOR HELP | ANSI     | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

These are the file-transfer protocols that this BBS can use.

Whenever you do a file transfer (downloading or uploading), both your computer and the computer you're connected to must use the same protocol. A protocol is basically a set of rules and conventions that both computers use to ensure the error-free transfer of data.

Remember that the protocol entered for the DATASTORM BBS in the Dialing Directory is XMODEM. The screen shows that this protocol is available on this BBS, so select it:

- **Press [4].**

```
File Name? ONLINE.DOC

Select from the following transfer protocols:

1 - TYPE file to your screen
2 - ASCII with DC2/DC4 Capture
3 - ASCII only, no Control Codes
4 - XMODEM
5 - YMODEM/YMODEM-g
6 - YMODEM/YMODEM-g Batch
7 - SEAlink
8 - KERMIT
9 - SuperKERMIT (Sliding Windows)

Choose one (Q to Quit): 4

Protocol=XMODEM   File ONLINE.DOC,   11 records
Est. Time:    0 mins, 06 secs at 2400 bps

Awaiting Start Signal
(Ctrl-X to abort)

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

You can now start the PROCOMM PLUS download procedure.

The estimated time required for receiving the file.

## *Telling PROCOMM PLUS to Download the File*

You've just told the BBS that you want to download a file and you've told it the filename you want to receive. Now, you need to tell PROCOMM PLUS the same thing. To begin:

- **Press PgDn.**

  PROCOMM PLUS displays a window that lets you select a file transfer protocol.

```
File Name? ONLINE.DOC
     ┌──┤ Download Protocols - 4184864 bytes free ├──────┐
Sele │                                                    │
     │   X) XMODEM                        A) ASCII        │
1 -  │   Z) ZMODEM                        R) RAW ASCII    │
2 -  │   Y) YMODEM (Batch)                T) TELINK       │
3 -  │   G) YMODEM-G (Batch)              M) MODEM7       │
4 -  │   O) 1K-XMODEM                     W) WXMODEM      │
5 -  │   E) 1K-XMODEM-G                   I) IMODEM       │
6 -  │   C) COMPUSERVE B+                 1) [EXT 1]      │
7 -  │   K) KERMIT                        2) [EXT 2]      │
8 -  │   S) SEALINK                       3) [EXT 3]      │
9 -  │                                                    │
     │ Your Selection:    (press ENTER for XMODEM)        │
Choo └────────────────────────────────────────────────────┘

Protocol=XMODEM   File ONLINE.DOC,   11 records
Est. Time:    0 mins, 06 secs at 2400 bps

Awaiting Start Signal
(Ctrl-X to abort)

 Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

Notice that XMODEM is the default protocol; this is because you specified XMODEM as the protocol for the DATASTORM BBS entry in the Dialing Directory.

*Note* *If the protocol specified in the Dialing Directory were not available on this BBS, you could have selected another protocol when you told the BBS to download the file, and then you would select the same protocol now.*

To use the XMODEM protocol:

- **Press [X] or [Enter].**

PROCOMM PLUS asks you to enter a name for the file you're about to download; note that it has entered a default of *online.doc* as that filename.

```
File Name? ONLINE.DOC

Select from the following transfer protocols:

1 - TYPE file to your screen
2 - ASCII with DC2/DC4 Capture
3 - ASCII only, no Control Codes
4 - XMODEM
5 - YMODEM/YMODEM-g
6 - Y┌──┤ Receive XMODEM ├──────────────────────────────────┐
7 - S│                                                      │
8 - K│ Please enter filename: ONLINE.DOC                    │
9 - S│                                                      │
     └──────────────────────────────────────────────────────┘
Choose one (Q to Quit): 4

Protocol=XMODEM   File ONLINE.DOC,   11 records
Est. Time:    0 mins, 06 secs at 2400 bps

Awaiting Start Signal
(Ctrl-X to abort)

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

When PROCOMM PLUS finds a filename on your screen after you tell it to download, it enters that filename for you (this optional feature is called *File Lookup*, and it's only used with some protocols). In this case, PROCOMM PLUS found *online.doc*, which you had typed when the BBS asked which file you wanted to download.

- **To store the file from the DATASTORM BBS under the filename *online.doc*, press [Enter].**

  PROCOMM PLUS displays a window that lets you monitor the progress of the file transfer.

```
<D>ownload, <P>rotocol, <E>xamine, <N>ew, <H>elp, or <L>ist
Selection or <CR> to exit: d

File Name? online.doc

Protocol=XMODEM   File ONLINE.DOC,   11 recor
Est. Time:    0 mins, 06 secs at 2400 bps

Awaiting Start Signal
(Ctrl-X to abort)

        PROTOCOL: XMODEM
       FILE NAME: ONLINE.DOC
       FILE SIZE:
     BLOCK CHECK:
    TOTAL BLOCKS:
   TIME ESTIMATE:
     TRANSMITTED:
      BYTE COUNT:
     BLOCK COUNT:
     CORRECTIONS:
     AVERAGE CPS:
      EFFICIENCY:
    LAST MESSAGE:
        PROGRESS: ▒▒▒▒▒▒▒▒▒▒

File Transfer in progress... Press ESC to abort
```

When the file transfer is complete, PROCOMM PLUS sounds an alarm for a few seconds to alert you, then the BBS displays this screen:

```
File Name? online.doc

Protocol=XMODEM   File ONLINE.DOC;   11 records
Est. Time:    0 mins; 06 secs at 2400 bps

Awaiting Start Signal
(Ctrl-X to abort)


<D>ownload, <P>rotocol, <E>xamine, <M>eu, <H>elp, or <L>ist
Selection or <CR> to exit:

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | OFF-LINE
```

Pressing [Enter] tells the BBS you're finished downloading files.

- **Press [Enter] to tell the BBS you're finished downloading files.**

  The BBS Files menu appears again.

You're finished with the DATASTORM BBS for now. To log off:

- **Press [G].**

  The BBS logs you off and disconnects the line.

## *Reading the File*

PROCOMM PLUS lets you read the contents of a file without exiting the program.

- **Press [Alt]-[V].**

  PROCOMM PLUS asks you to name the file you want to read.

- **Type *online.doc* and press [Enter].**

  If PCINSTAL set up a downloading directory for you, then you'll need to type the full download path followed by ***online.doc,*** and press [Enter].

PROCOMM PLUS displays the first screen of the file.

```
                    AN INTRODUCTION TO USING ONLINE SERVICES
                    Copyright 1990 by DATASTORM TECHNOLOGIES

In the beginning...

...microcomputers were small, self-contained universes. It took a lot of
determination, even courage, to learn to use them. The excitement they
generated in their users had more to do with possibilities than with
accomplishments.

But those possibilities drove programmers, who immediately set out to connect
their personal computers to each other. They wrote simple communications
programs, and invented "protocols" (and programs incorporating them) to handle
the complicated task of sending and receiving files from computer to computer
across phone lines. Their programs spoke to "modems" (MOdulation-DEModulation
devices), which had been around for a while, used to connect dumb terminals to
mainframes.

A good deal of the excitement of using personal computers now is the ease with
which we can access and exchange knowledge and ideas. It ties us together,
makes us a community rather than isolated individuals sitting before keyboards
and monitors, and provides us with endless possibilities for learning and
growth. It empowers us in a way that larger, impersonal mainframe computers,
or any other technology for that matter, has rarely have been able to do.
Home: Top of file      PgUp: Previous page      PgDn: Next page      ESC: Exit
```

To see additional screens:

- Press [PgDn].

When you're done reading:

- Press [Esc].

  PROCOMM PLUS returns to the previous display.

In the next chapter, you'll learn how to use some advanced features of PROCOMM PLUS to save time.

CHAPTER

# 4

# Automating Communications

This chapter describes how you can save time by allowing PROCOMM PLUS to automate certain common communications tasks.

You'll learn how to:

- Use a Meta key to automatically "type" words or phrases that you use often.
- Use a script file to automatically perform a complete series of tasks—logging on to the DATASTORM BBS.

## To begin this chapter

- Complete the procedures in the previous chapters.

# Creating Meta Keys

One of the functions of Meta keys is the storing of a sequence of keystrokes. When you "play back" a TEXT Meta key, PROCOMM PLUS automatically "presses" the keys for you. Meta keys are useful for entering words or phrases that you use often; this saves both time and the possibility of a typing mistake!

When you logged on to the DATASTORM BBS in Chapter 2, it asked you for your first and last name. In this chapter, you'll create Meta keys that enter your first and your last name for you.

To begin:

- **Press [Alt]-[M].**

  PROCOMM PLUS displays the Meta Key screen.

```
META KEYS: PCPLUS.KEY

        TYPE    CONTENTS
Alt-1   TEXT
Alt-2   TEXT
Alt-3   TEXT
Alt-4   TEXT
Alt-5   TEXT
Alt-6   TEXT
Alt-7   TEXT
Alt-8   TEXT
Alt-9   TEXT
Alt-0   TEXT

▶       ↑/↓ Select R Revise L Load S Save C Clear ESC Exit

                    META KEYS
```

The [Alt]-key combinations at the left are what you will later press to "play back" the Meta key. You'll use the [Alt]-[1] key to send your first name and the [Alt]-[2] key to send your last name.

- **Press [R] to revise the highlighted Meta key.**

  PROCOMM PLUS moves the cursor into the TYPE field. As mentioned earlier in Chapter 2, Meta keys can perform other functions as well as sending text strings (for example, you could run a DOS program or an ASPECT script with a single key). You can toggle these choices with the space bar; for now, however, we'll use only the TEXT string type of Meta key.

- **Press [Enter].**

  Next, the cursor moves to the CONTENTS field.

- **Type your first name, then type ^*M*.**

  The ^ symbol (called a caret) is the shifted character on the [6] key.

```
META KEYS: PCPLUS.KEY

        TYPE    CONTENTS
Alt-1   TEXT    FRED^M
Alt-2   TEXT
Alt-3   TEXT
Alt-4   TEXT
Alt-5   TEXT
Alt-6   TEXT
Alt-7   TEXT
Alt-8   TEXT
Alt-9   TEXT
Alt-0   TEXT

▶       ↑/↓ Select R Revise L Load S Save C Clear ESC Exit

                                  META KEYS
```

When you play back this Meta key, PROCOMM PLUS will "translate" the ^M combination into a carriage return. The effect will be as if you had pressed [Enter] after typing your first name.

- **Press [Enter] to complete this macro entry.**

Now, for the [Alt]-[2] string:

- **Press [↓] to move the highlight to the [Alt]-[2] key.**
- **Press [R] to revise the highlighted macro.**

  Again, you'll select the TEXT function for this Meta key.

- **Press [Enter].**

  PROCOMM PLUS moves the cursor to the CONTENTS field.

- **Type your last name, then type ^*M* again.**
- **Press [Enter] to complete this key entry.**

In the next step, you'll save this Meta key set (Alt-0 through Alt-9) in a disk file so that you'll be able to use these keys the next time you start PROCOMM PLUS. If you were to omit this step, the keys would be available only during this session; the key definitions would disappear when you exited PROCOMM PLUS.

- **Press S.**

  PROCOMM PLUS saves the current Meta key file under the default filename PCPLUS.KEY. To create a new key file, you'd use the Load command.

- **Press Esc to close the Meta key window.**

## *Using Meta Keys*

To see how using a Meta key can save you on-line time, call the DATASTORM BBS again and use the string you just created to log on.

- **Press Alt-D to display the Dialing Directory.**

- **Press Enter to dial the DATASTORM BBS.**

  PROCOMM PLUS opens the Dialing Window and dials the DATASTORM BBS.

When the BBS answers the call (you'll see a CONNECT message next to CALL RESULT in the Dialing window), the DATASTORM BBS displays this screen again:

```
WELCOME TO THE DATASTORM DISTRIBUTION BBS

NOTICE:  The BBS numbers are:

  (314) 875-8503 (2400 bps MNP-Level 5)
  (314) 875-8608 (2400 bps)
  (314) 875-8523 (9600 bps V.32 & MST)

The DATASTORM switchboard number is (314) 443-3282 [443-DATA].

When logging on, please use your real name. This board is open -- you
will be prompted to give yourself a password for future logons.

We encourage all users to continue their requests for technical support
on the CompuServe Information Service. Registered users of PROCOMM PLUS
are encouraged to phone our technical support department for help.

COMPUSERVE:  To access the DATASTORM support section after logon, type
"GO DSTORM" to enter the DATASTORM forum, and type "JOIN" if you have
not already done so.  "RTN" allows you to read new message threads.

First Name? ↑
Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

The BBS prompts you to enter your first name.

The Alt-1 Meta key you just created will enter your first name for you:

- **Press Alt-1.**

  PROCOMM PLUS "types" your first name and "presses" Enter for you. The BBS then prompts you to enter your last name.

Use the Alt-2 Meta key you just created:

- **Press Alt-2.**

  PROCOMM PLUS now enters your last name and a carriage return. The BBS then displays your location (it remembers from the first time you logged on) and asks you if it is correct.

- **Press Y to confirm that your location is correct.**

  The BBS asks you to enter your password.

- **Type your password, then press Enter.**

  The BBS displays its Main menu again.

*Note You could also have entered your password in a Meta key. If you're concerned about security, however, it's best to enter your password manually.*

You don't need to do anything else on the BBS right now, so you can log off and disconnect.

- **Press [G].**

  The BBS logs you off and disconnects.

## *Introducing Script Files*

While a Meta key lets you automate the typing of words and phrases by pressing a single [Alt]-key combination, a script file lets you automate *entire calls and procedures*—and you can do so *without even pressing a single key.* For example, you can use script files to:

- Log on to a BBS or an information service.
- Automate the reading of public and private mail on a BBS.
- Perform unattended file transfers.
- Create menu-driven applications.

An ASPECT script file is an ordinary text file that contains a single command on each line; before PROCOMM PLUS runs the script, it's "compiled" into a smaller, faster-executing program, and then PROCOMM PLUS executes each command in the file. Scripts are written in the ASPECT script language; they have extensions of *.ASP* (for the uncompiled source files) and *.ASX* (for the compiled script programs).

Here's a listing of the commands in a typical script file. The purpose of this particular script, called DSTORM.ASP, is to log on to the DATASTORM BBS.

***Note*** *Don't worry if you don't understand some of this script; you'll find complete information on all* ASPECT *commands in the* ASPECT SCRIPT LANGUAGE REFERENCE MANUAL.

```
string first_name              ; declare string variables
string last_name
string my_passwrd
proc main                      ; declare main procedure
  clear                        ; clear the screen
  box 0 15 9 60 14             ; paint a box
  atsay 2 17 14 "Logging onto the DATASTORM BBS..."
  atsay 4 17 14 "Please enter your first name: "
  atget 4 47 15 12 first_name ; prompt for first name
  atsay 5 17 14 "Please enter your last name: "
  atget 5 47 15 12 last_name ; prompt for last name
  atsay 7 17 14 "Please enter your password: "
  matget 7 47 15 8 my_passwrd        ; masked atget for password
  emulate ansi                 ; set ANSI terminal emulation
  if not fromddir              ; dial only if not from a
    dial "1"                   ; Dialing Directory entry
  endif
  pause 2                      ; allow time for modem connect
  set txpace 50                ; set character pacing to 50 ms
  log open "newbbs.log"        ; open a log file
  transmit "^M"                ; send a carriage return
  waitfor "name?"              ; wait for "First name?" prompt
  log suspend                  ; suspend the log file
  transmit first_name          ; send your first name
  transmit "^M"                ; follow with a carriage return
  waitfor "name?"              ; wait for "Last name?" prompt
  transmit last_name           ; send your last name
  transmit "^M"                ; follow with a carriage return
  waitfor "correct?"           ; wait for verification prompt
  transmit "Y"                 ; verify with a "Y" character
  waitfor "password:"          ; wait for password prompt
  transmit my_passwrd          ; send your password
  transmit "^M"                ; follow it with a carriage return
  log resume                   ; continue the log file
  waitfor "-Press Any Key-"    ; wait for end of messages
  log suspend                  ; suspend the log file again
  transmit "^M"                ; send carriage return to continue
  pause 2                      ; wait two seconds
  log resume                   ; continue the log file
  log close                    ; close log file
  transmit "^M"                ; send carriage return to return to
endproc                        ; main menu. End of main procedure
```

This script file is one of several supplied with PROCOMM PLUS that you can use to log on to various information services and bulletin boards.

In the rest of this chapter, you'll use this script file in two ways:

- **You'll specify this script file in the Dialing Directory entry for the DATASTORM BBS.** When PROCOMM PLUS calls the BBS, it will automatically execute the commands in the script file as soon as the connection is made (except for the DIAL command, since the dialing is done by the Dialing Directory).
- **You'll execute the script file from Terminal mode.** Because there's a DIAL command in the script file, you can call the BBS without using the Dialing Directory.

## *Using a Script File with the Dialing Directory*

To specify this script file in the Dialing Directory entry for the DATASTORM BBS, you need to display the Dialing Directory and revise the entry.

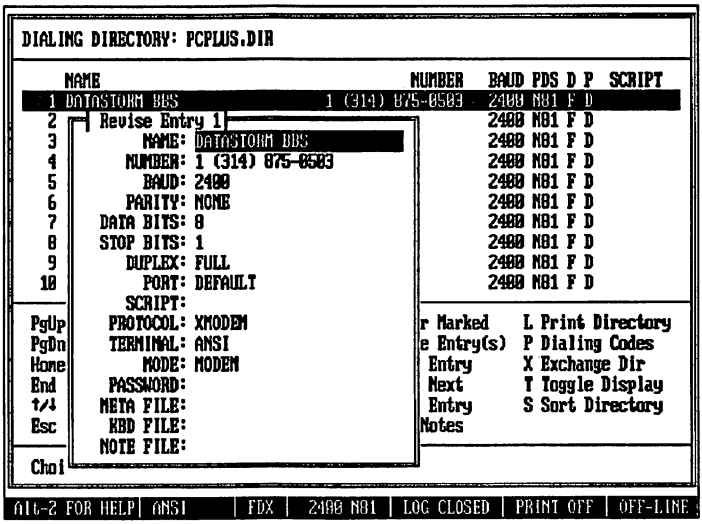
■ **Press (Alt)-(D).**

The Dialing Directory appears.

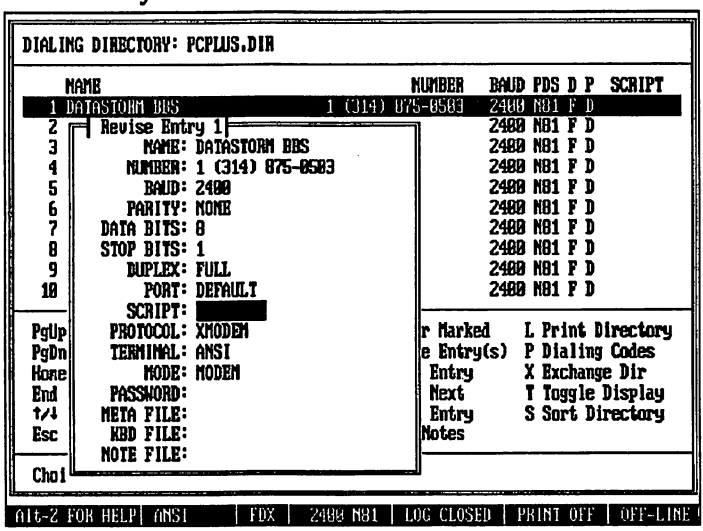
When you entered the DATASTORM BBS in the Dialing Directory (in Chapter 2), you omitted a script file. You can specify a script file for that entry now simply by revising that entry. With that entry highlighted:

■ **Press (R) to revise entry 1.**

The following screen appears.




- **Press [Tab] repeatedly to move the cursor next to SCRIPT in the Revise Entry window.**




- **Type *DSTORM*, then press [Enter].**

  The *.ASP* file extension is not required.

- **Press [Ctrl]-[PgDn] to jump directly to the Clear Last Date prompt.**

- **Press [N].**

  PROCOMM PLUS asks whether you want to accept this entry.

- **Press [Y].**

  PROCOMM PLUS asks whether you want to save this entry on disk.

- **Press [Y].**

  PROCOMM PLUS saves your changes and closes the Revise Entry window.

Now, call the DATASTORM BBS again and let the script file log on for you. Note that the file DSTORM.ASP should be present; if you're running PROCOMM PLUS from a floppy, PCINSTAL may not have copied DSTORM.ASP to your working disk, so you may have to copy it manually.

- **Press [Enter] to dial the DATASTORM BBS again.**

After you connect, PROCOMM PLUS takes a moment to prepare your script by *compiling* it (more on this shortly). The script prompts you for your first name (just as the BBS did previously).

- **Type your first name and press [Enter].**

Next, your ASPECT script prompts you for your last name.

- **Type your last name and press [Enter].**

Now, the script asks for your password. Note that an asterisk (*) is substituted for each letter of your password—this prevents it from being seen by a casual observer!

- **Type your password and press [Enter].**

Your screen will show the BBS prompting for your first name, just as it did when you dialed without a script file; this time, though, PROCOMM PLUS will complete the log-on procedure for you, and the BBS Main menu will appear on your screen. You'll note that the script name no longer appears in the left-hand corner of the Status line, indicating that you are once again in manual control of the session.

Notice that PROCOMM PLUS must compile the DSTORM script before it can be used; after the compilation is finished, the file DSTORM.ASX will be written to disk for future use. PROCOMM PLUS first searches your disk for a file with the name you specify and an extension of *.ASX*. If it doesn't find the compiled file, it will search for a file with the specified name and an extension of *.ASP* (which it will attempt to compile and run). Therefore, now that you've run DSTORM.ASP once, PROCOMM PLUS will use the file DSTORM.ASX the next time you log on to the bulletin board.

You'll learn more about compiling ASPECT later in this manual; full technical information is available in the ASPECT SCRIPT LANGUAGE REFERENCE manual.

You don't need to do anything else on the BBS right now, so you can log off.

- **Press** [G].

  The BBS logs you off and disconnects.

## *Using a Script File in Terminal Mode*

To execute a script file in Terminal mode, without using the Dialing Directory:

- **Press** [Alt]-[F5].

  PROCOMM PLUS asks which script file you want to execute. Let's suppose that you don't remember the name of the script you'd like to run; to display a list of scripts in both the current directory and the directory named by your "SET PCPLUS=" environment variable:

- **Press** [Enter].

  PROCOMM PLUS displays a listing of the available scripts. Since DSTORM is already highlighted:

- **Press** [Enter].

*Note An extension isn't needed if you type in a filename.*

PROCOMM PLUS begins executing the compiled script file DSTORM.ASX. The Dialing window appears on your screen, and PROCOMM PLUS dials the DATASTORM BBS. After you connect, the BBS will again prompt you for your first name; PROCOMM PLUS will complete the log-on procedure and record the computer quote for you, just as it did in the last section.

Again, since you don't need to do anything on the BBS, you can log off and disconnect.

- **Press** [G].

*Note Because a script source program is an ordinary text file, you can use your word processor to edit the DSTORM.ASP file, but be sure to save it as an unformatted ASCII file (see your word processor's manual to find out how to do this). The DSTORM.ASX file is compiled, and therefore can't be altered; to force PROCOMM PLUS to recompile DSTORM.ASP with your changes, make sure you delete DSTORM.ASX from your disk (or specify the script file with its .ASP extension).*

For more information about script files, see the following chapters in the ASPECT SCRIPT LANGUAGE REFERENCE MANUAL:

- Chapter 1, which describes how to create a script file and gives you an overview of the ASPECT script language.
- Chapter 2, which gives complete details about each command in alphabetical order.

## *Where to Go from Here*

Congratulations—you've completed the PROCOMM PLUS Tutorial!

The chapters in the next part of this manual give you the details about:

- Connecting to another computer.
- Using each of the PROCOMM PLUS commands.
- Customizing PROCOMM PLUS for your particular preferences and applications.

CHAPTER

5

# Making the Connection

Overview ..... 64
Placing a Call ..... 65
Answering a Call ..... 67

## Overview

You can connect to another computer in two ways:

- You can have PROCOMM PLUS *place* a call to that computer. This is the most common way to begin—for example, it's the method you'd use to connect to an information service like CompuServe.
- You can have PROCOMM PLUS *answer* a call from the other computer. If you were connecting with another personal computer, one PC would place the call and the other would answer. PROCOMM PLUS features a built-in Host system that can answer for you automatically; alternately, you can answer the incoming call manually.

In this chapter, we'll learn more about both originating and answering a call.

## Placing a Call

Placing a call to another computer consists of three steps:

- **Getting ready to place the call.** You must be sure that your computer and the other computer are using the same line settings (baud rate, parity, number of data bits and number of stop bits).
- **Calling the other computer.** Typically, you'll use the Dialing Directory to do this—however, you can also dial a number from within an ASPECT script.
- **Completing the connection.** Depending on the remote system, you may need to change some settings after the other computer answers your call.

Note that the following is more of an overview of the process, rather than a step-by-step procedure; some of the steps may not be necessary. The essential part of the process is the second phase—dialing the other computer—which is described in detail under "Dialing a Computer" in Chapter 6.

- First, make sure that the line settings specified in the Dialing Directory entry match those that the other computer will be using.

  The line settings include the baud rate, the parity, the number of stop bits and the number of data bits. Generally, these last three settings are either: no parity, eight data bits and one stop bit (N-8-1) or even parity, seven data bits and one stop bit (E-7-1).

  If necessary, change the line settings for the entry using the procedure described under "Adding or Changing an Entry" in Chapter 6.

- Use the Dialing Directory (press [Alt]-[D]) to call the other computer.

  For details, see "Dialing a Computer" in Chapter 6.

When the other computer has answered your call and the two computers have completed the connection, the message sent by your modem appears next to LAST CALL in the Dialing window, then PROCOMM PLUS clears the screen. The LAST CALL message usually contains the word CONNECT, but the actual message depends on your particular modem and on the baud rate at which the connection has been made.

- If you've connected to another personal computer running PROCOMM PLUS or a similar program, you can begin typing.

OR

- If you've connected to a BBS or to an information service (like CompuServe) but your screen remains blank for more than a few seconds, press [Enter] once or twice until you get a response.

  The "log-on procedure"—what you must type after a BBS or information service answers your call—varies from system to system. If it's a BBS, you generally can log on by responding to its prompts. If it's an information service, check its user manual to find out how to log on.

- If each character you type appears twice (lliikkee tthhiiss) or if it does not appear at all, press [Alt]-[E] to switch the duplex mode. Half duplex is normally used during a session with another PC (rather than a BBS or online service).

- If the cursor does not move to the next line when a line is full or when you press [Enter], or if text you type or text from the other computer is displayed double-spaced, press [Alt]-[F3] to toggle line feeds on or off.

- If *some* of the data from the other computer looks garbled (appears in Greek or other strange-looking characters), press [Alt]-[P] and switch the parity and data bits settings between N-8-1 and E-7-1.

  For more information, see "Changing Line and Port Settings" in Chapter 8.

- If *all* of the data from the other computer looks garbled, press [Alt]-[P] and change the baud rate.

  If changing the baud rate does not fix this problem, it's likely caused by "line noise" (static carried by your telephone line). Try calling at another time.

Once you can see what you're typing and what the other computer is sending to you, you're on-line! Chapter 7 describes how to use PROCOMM PLUS commands on-line.

# *Answering a Call*

*Note The easiest way to answer a call is by using* PROCOMM PLUS' *Host mode, which is described in Chapter 9. If you prefer not to use Host mode, you can answer a call as described here.*

When another computer is calling, you'll hear it "ringing" through your modem's speaker (if it has one and the speaker is enabled), and the message RING will appear on your screen (if your modem is set to display verbal messages).

PROCOMM PLUS can set your modem so that it will answer all incoming calls automatically. If you've done this, you won't need to do anything when the RING message appears. Otherwise, each time another computer calls you'll need to manually send the commands to your modem to answer the call.

*Note If you're using the same telephone line for both data calls (where your computer connects with another through your modem) and voice calls (calls in which you talk to another person in the usual manner), you should answer calls* manually. *If you told* PROCOMM PLUS *to answer all calls automatically, your modem would answer the next time a* person *called to talk—and instead of hearing your hello, they would hear your modem's handshake signal (a high-pitched tone) and likely hang up. For more information, see "Auto Answer" in Chapter 7.*

Like placing a call, answering a call consists of three steps:

- **Preparing for the call.** You need to make sure that your computer and the other computer are using the same baud rate and line settings.
- **Answering the call.** You'll do this by sending a command to your modem.
- **Completing the connection.** You may need to change some settings after your computer answers the incoming call.

*Note The following is more of an overview of the process, rather than a step-by-step procedure; some of the steps may not be necessary.*

- Find out the line settings that the other computer will be using.

  The line settings include the baud rate, the parity, the number of stop bits and the number of data bits. Generally, these last three settings are either no parity, eight data bits and one stop bit (N-8-1) or even parity, seven data bits and one stop bit (E-7-1).

- If necessary, change your line settings (press Alt-P) to match those of the other computer.

  For more information, see "Changing Line and Port Settings" in Chapter 8.

- To answer every call automatically, press Alt-Y.

  This sends the command specified in the Setup to your modem (see "Modem Command Options" in Chapter 8. If your modem is not Hayes-compatible, check its manual to find out the command you should store in the Setup.

- To answer a call manually, type *ATA* (in uppercase letters), then—when the other computer calls you and the RING message appears on your screen—press Enter.

  This command works for a Hayes-compatible modem. If your modem is not Hayes-compatible, check the manual to find out the command you should use.

When your PC has answered the incoming call and the connection is complete, a message appears on your screen. This message usually contains the word CONNECT, but it depends on your particular modem and the baud rate at which the connection has been made.

- Begin typing.

- If *all* of the data from the other computer looks garbled, press Alt-P and change the baud rate.

- If the characters that you type appear twice (lliikkee tthhiiss) or if they do not appear at all, press Alt-E to switch the duplex mode.

- If the cursor does not move to the next line when a line is full or if text is displayed double-spaced, toggle your line feeds on or off by pressing Alt-F3.

- If *some* of the data from the other computer looks garbled (appears in Greek or other strange-looking characters), press Alt-P and switch the parity and data bits settings between N-8-1 and E-7-1.

  For more information, see "Changing Line and Port Settings" in Chapter 8.

  If changing the baud rate does not fix this problem, it's likely caused by line "noise" (intermittent static - you've probably heard it during a voice telephone call).

Once you can see what you're typing and what the other computer is sending to you, you're on-line! Chapter 7 describes how to use PROCOMM PLUS commands on-line.

In the next chapter, we'll use the Dialing Directory to:

- permanently record these settings for each system you call.
- dial one or more remote systems quickly and easily.

CHAPTER

# 6

# Using the Dialing Directory


Displaying Dialing Directory Entries ..... 73
Highlighting an Entry ..... 74
Adding or Changing an Entry ..... 75
Adding or Changing a Dialing Code ..... 80
Dialing a Computer ..... 83
Call History Data ..... 88
Erasing Entries ..... 89
Attaching Notes to an Entry ..... 90
Printing the Dialing Directory ..... 90
Sorting the Dialing Directory ..... 91
Exiting the Dialing Directory ..... 91

## Overview

You probably have an address book; it's a convenient way to save the address and phone numbers of the people you know, usually sorted in alphabetical order.

PROCOMM PLUS has a similar function. It stores the names and numbers of the computers you call in a "Dialing Directory".

A Dialing Directory can contain up to 200 entries. If you want more than 200 entries (or if you want to maintain separate groups of entries), you can create additional Dialing Directories.

Each entry in a Dialing Directory consists of the following information:

- The name of the remote system.
- The telephone number.
- The baud rate at which you want to connect.
- The line settings (parity, number of data bits and number of stop bits).
- The duplex mode.
- The COM port to use for the system.
- The connection mode (through a modem or a cable).
- The optional Script file you want to execute when the connection is made.
- The Note file for this entry (used by the Dialing Directory Jot function).
- The protocol you'll use for file transfers.
- The terminal to emulate after the connection is made.
- The optional password you'll use for the system.
- The Meta key file for the system.
- The Keyboard file for the system.

# Displaying Dialing Directory Entries

## To activate the current Dialing Directory

- Press Alt-D.

OR

- Select Dial Dir from the Menu line.

PROCOMM PLUS displays the first "page" (or screen) of entries for the current Dialing Directory (normally PCPLUS.DIR unless you activated a different Directory after starting PROCOMM PLUS). A page can hold 10 entries (or more, if you're using an EGA or VGA monitor in "extra line" mode).

The name of the current Dialing Directory.

```
DIALING DIRECTORY: PCPLUS.DIR

  NAME                                    NUMBER   BAUD PDS D P  SCRIPT
  1                                                2400 N81 F D
  2                                                2400 N81 F D
  3                                                2400 N81 F D
  4                                                2400 N81 F D
  5                                                2400 N81 F D
  6                                                2400 N81 F D
  7                                                2400 N81 F D
  8                                                2400 N81 F D
  9                                                2400 N81 F D
 10                                                2400 N81 F D

PgUp Scroll Up     Space Mark Entry     C Clear Marked     L Print Directory
PgDn Scroll Dn     Enter Dial Selected  E Erase Entry(s)   P Dialing Codes
Home First Page    D Dial Entry(s)      F Find Entry       X Exchange Dir
End Last Page      M Manual Dial        N Find Next        T Toggle Display
↑/↓ Select Entry   A Add Entry          G Goto Entry       S Sort Directory
Esc Exit           R Revise Entry       J Jot Notes

Choice:

ALT-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | OFF-LINE
```

### To activate a different Dialing Directory

If you want to use a different Dialing Directory or create a new one:

- Press [X].
- Type the name of the directory (without an extension) and press [Enter].

  If the Dialing Directory already exists, PROCOMM PLUS displays it; if not, it clears the entries on the screen so you can begin the new directory.

### To display additional entries

Although PROCOMM PLUS can show only a page of Directory entries at a time, a single Directory can hold up to 200 entries. You can display the remaining entries using the following keys:

| To ... | Press ... |
|---|---|
| Display the next page of entries | [PgDn] |
| Display the previous page entries | [PgUp] |
| Display the first page of entries | [Home] |
| Display the last page of entries | [End] |

If you're using a mouse, you can also scroll back and forth through the Dialing Directory by moving the mouse up and down.

## *Highlighting an Entry*

If you want to dial, revise or erase an entry, you first need to highlight it.

### To highlight the next or preceding entry

- Press [↓] or [↑].

OR

- Move your mouse up or down.

### To go to an entry

- Press [G].
- Type the entry number, then press [Enter].

### To find an entry

- Press [F] or [/].
- Type any portion of the name or telephone number in the entry you want to find, then press [Enter].

  PROCOMM PLUS searches downward through the directory for the text string you entered, continuing from the top of the directory if necessary.
- To find another entry that contains what you typed, press [N].

## *Adding or Changing an Entry*

### To add an entry

- Press [A].

  PROCOMM PLUS selects the first blank entry in the current Dialing Directory. If there are no empty entries in the current Directory, you'll be notified with a message. The Revise Entry window appears on the screen.
- Type the name for this entry.
- If you need to edit what you've typed, use these keys:

| To ... | Press ... |
|---|---|
| Move the cursor to the left | [←] |
| Move the cursor to the right | [→] |
| Move the cursor to the beginning of the field | [Home] |
| Move the cursor to the end of the field | [End] |
| Switch between Insert and Overtype mode for entering characters | [Ins] |
| Delete the character at the cursor | [Del] |
| Delete the character to the left of the cursor | [Backspace] |
| Delete all characters | [Ctrl]-[Backspace] |
| Delete all characters from the cursor to the end | [Ctrl]-[End] |

- When you've finished typing the name for this entry, press [Enter].

  PROCOMM PLUS moves the cursor next to NUMBER so that you can enter the telephone number for this entry.

*Note To change the value of a field after you've pressed* [Enter]*, press* [Shift]-[Tab] *to move from the current field back to the previous field again. If you want to skip to the next field immediately, press* [Tab].

- Type the number for this entry.

  - PROCOMM PLUS ignores parentheses, dashes and spaces in a telephone number, so you can use them if you wish; for example, you can type either *1 (800) 555-1212* or *18005551212*.

  - You can include one or more dialing codes—A through J—before, within or after the actual telephone number. When PROCOMM PLUS encounters a dialing code while dialing, it dials the characters associated with that code. These codes are typically used to dial through a long-distance carrier or through a PBX system. The maximum number of characters that PROCOMM PLUS can dial—including the characters associated with a dialing code—is 60.

    The procedure under "Adding or Changing a Dialing Code" shows you how to identify the dialing codes. You can include a dialing code in the entry now (even if you haven't already specified the associated characters).

- When you've finished typing the telephone number for this entry, press [Enter].

  PROCOMM PLUS lists the choices for the BAUD field, highlighting the current value.

- If you don't want to use the baud rate that's already selected, highlight the baud rate you want in the list.

  Type the first number in the baud rate or use [↓] or [↑].

- Press [Enter] to use the highlighted baud rate.

  PROCOMM PLUS lists the choices for the PARITY and highlights the current value.

- If you don't want to use the parity that's already selected, highlight the parity you want in the list.

  Type the first letter in the parity or use ↓ or ↑.

- Press [Enter] to use the highlighted parity.

  PROCOMM PLUS next moves the cursor to DATA BITS.

- If you don't want to use the specified number of data bits, type *7* or *8* and press [Enter].

  PROCOMM PLUS moves the cursor to STOP BITS.

- If you don't want to use the specified number of stop bits, type *1* or *2*, then press [Enter].

  PROCOMM PLUS lists the choices for the DUPLEX mode and highlights the current value.

- If you don't want to use the duplex mode that's already selected, press [H] to highlight HALF or [F] to highlight FULL and press [Enter].

  PROCOMM PLUS moves the cursor to the PORT field, listing the choices for the com port and highlighting the current value.

- To use another COM port, type a number from *1* to *8* and press [Enter]. If you select *DEFAULT*, PROCOMM PLUS will use the currently-active com port when it dials this entry.

  PROCOMM PLUS moves the cursor next to SCRIPT so that you can specify a script file for this entry.

- If you want to specify a script file, type the name of the file (without an extension) and press [Enter]. Script files are optional.

  PROCOMM PLUS lists the choices for the file transfer PROTOCOL and highlights the default value.

  The various file-transfer protocols are discussed in appendix B, "File-Transfer Protocols".

- If you don't want to use the protocol that's already selected, highlight the protocol you want in the list.

  Type the first letter in the protocol or use ↓ or ↑.

- Press [Enter] to use the highlighted protocol.

*Note As you can see, the value for* PROTOCOL *isn't displayed within the Dialing Directory right now; that's because there's more data saved for each entry than can be displayed at once! To view the protocols on a Dialing Directory page (**after** you've finished revising this entry), press* [T] *to "toggle" (or shift) the display. There are 3 information displays within the Dialing Directory; you'll note that all of the remaining fields appear on the 2 other displays. You can return to the normal Dialing Directory display by pressing* [T] *again until it appears.*

PROCOMM PLUS lists the choices for the TERMINAL and highlights the emulation *family* (a group of terminals built by the same manufacturer).

- If you don't want to use the default terminal emulation, first highlight the terminal *family* you want in the list.
- Press [Enter] to select the highlighted terminal family.

  Now use [↓] and [↑] to highlight the specific terminal and press [Enter].

  PROCOMM PLUS moves the highlighted cursor next to the MODE field.

- If you don't want to use the connection mode that's already selected, highlight the MODE you want.

  Type the first letter in the mode or use [↓] or [↑].

*Note Typically, a modem provides the connection between a remote system and your PC, so this field will probably remain MODEM. However, many computers are also connected directly with a cable, so modem control strings aren't required; in this case, you'd use DIRECT mode. For more information on null modem cables and direct connections, please refer to the Appendices at the back of this manual.*

- Press [Enter] to select the connection mode.

  Next, PROCOMM PLUS moves the cursor to the PASSWORD field for this entry.

- If you'd like to record your password for the system, enter up to 8 characters and press [Enter].

**IMPORTANT: The PASSWORD field is provided as a convenience for the home or casual user with no need for security. Because the PASSWORD field is openly displayed (without being encrypted), it should not be considered secure, and should not be used by those desiring a secure system.**

PROCOMM PLUS moves the cursor next to the META FILE field.

- If you want to use a Meta key file, type the name of the file (without an extension) and press [Enter]. Note that you do **not** need to specify a name here to use the default file PCPLUS.KEY.

  PROCOMM PLUS moves the cursor next to the KBD FILE field.

- If you wish to specify a Keyboard redefinition file, type the name of the file (without an extension) and press [Enter]. Note that you do **not** need to specify a name here to use the default file PCPLUS.KBD.

  Finally, the cursor moves to the NOTE FILE field.

- If you wish to specify a Note file for the Dialing Directory Jot function, type the name of the file (without an extension) and press [Enter]. Note that you do **not** need to specify a name here; if you don't, PROCOMM PLUS will prompt you for a Note file name the first time you use Jot for that entry.

  PROCOMM PLUS asks whether you want to CLEAR THE LAST DATE AND TOTAL. PROCOMM PLUS keeps track of both the last date you called and the number of times you've called each entry. This prompt lets you erase the last date and number of total calls for this entry; to display this information, see "Displaying the History Data" in this chapter.

- Press [Y] to clear the history data, or press [N] to leave it unchanged and continue.

  PROCOMM PLUS asks whether you want to put this entry into the Dialing Directory.

- Press [Y] to add this entry to the Dialing Directory or press [N] to begin revising this entry again.

- If you pressed [Y] to put this entry into the Dialing Directory, PROCOMM PLUS asks whether you want to save this entry in the current Dialing Directory on disk.

- Press [Y] if you want this entry to appear in your permanent Dialing Directory; it will be saved to disk.

OR

- Press [N] if you want to keep this entry in the Dialing Directory only for this session; it will be lost when you exit PROCOMM PLUS.

### To change an entry

Use the same procedure you use for adding an entry.

- Press [R].

- To change a field, type over the existing characters (or, for submenus like TERMINAL, use the cursor to select a different choice) and then press [Enter].
- To keep the same value for a field, just press [Enter] or [Tab] to skip to the next field.
- To move backwards to the previous field, press [Shift]-[Tab].
- To "jump" directly from any field to the CLEAR THE LAST DATE AND TOTAL prompt, press [Ctrl]-[PgDn]. You can use [Ctrl]-[PgDn] from within the field, without pressing [Enter].

For example, if you want to change only the telephone number in an entry, press [Enter] when the name is highlighted, type the new telephone number. Now, press [Ctrl]-[PgDn] and answer the history and save prompts.

## *Adding or Changing a Dialing Code*

PROCOMM PLUS lets you specify up to 10 dialing codes. Each dialing code represents a series of characters that PROCOMM PLUS will dial along with a telephone number. You can use these codes to dial, for example, through a long-distance carrier or through a PBX system.

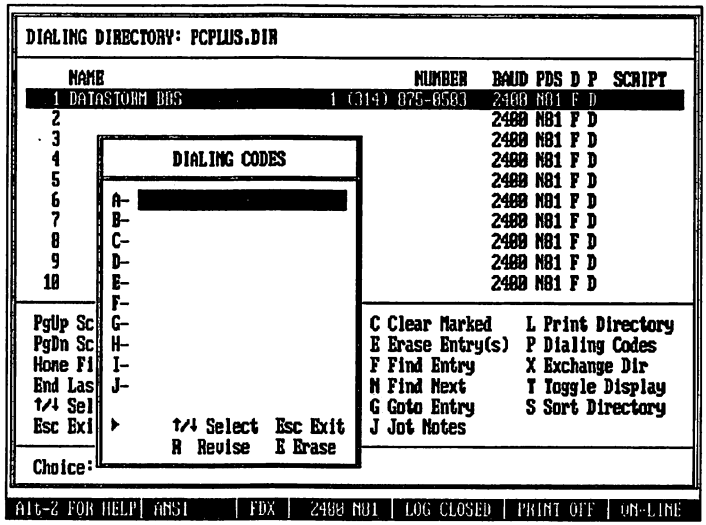
You can use a dialing code in two ways:

- You can include one or more dialing codes before, within or after the telephone number in a Dialing Directory entry (as described under "Adding or Changing an Entry").
- You can type one or more dialing codes before or after the entry number when you dial a computer by typing the entry number (as described under "Dialing a Computer").

## To add or change a dialing code

With the Dialing Directory on your screen:

- Press [P].




- Highlight the code you want to add or change by pressing [↓] or [↑].
- Press [R].
- Type the characters for this dialing code.

  If you're editing an existing code, you can use the same keys you use for editing a name or telephone number in a Dialing Directory entry—see "Adding or Changing an Entry" in this chapter. If you're revising codes, you can press [Tab] to move down the screen to the next code, while pressing [Shift]-[Tab] moves the cursor up the screen to the previous code.
- When you're done, press [Enter].
- To return to the Dialing Directory, press [Esc].

*Note If you want your modem to pause while dialing the entry containing a code name, type a comma (,) where you want the delay. Each comma normally results in a 2-second delay. For example, if you're dialing from a PBX system that requires you dial 9 and wait a second before getting the dial tone to dial outside, type 9, then a comma, then type the number.*

*Example* *Suppose you want* PROCOMM PLUS *to dial an access code before dialing a telephone number.*

1. *Highlight a dialing code, say* A, *then press* [R] *to revise it.*
2. *Type the local access number, such as* 123-4567.
3. *Type several commas (one comma gives a 2-second delay) to account for how long you have to wait to get the next tone with your system.*
4. *Type your code, such as* 99999.
5. *Type another comma to account for the delay in getting the dial tone.*
6. *Press* [Enter].

   *If you normally need a delay of 6 seconds after dialing an access number,* "123-4567,,,99999," *would be the entry for code A.*

7. *To have* PROCOMM PLUS *dial this code before a telephone number, just type* A *before the telephone number in the entry. For example, when entering the* NUMBER *in the Dialing Directory entry to dial the telephone number 1 (800) 555-1234, type* A 1 (800) 555-1234.

If you need to have a telephone number include A through J as a letter (rather than as a dialing code), define the character string associated with the dialing code to be the code itself. For example, if you need to have a telephone number include the letter J, define dialing code J to represent the letter J.

If you dial a number that includes a dialing code and your modem doesn't recognize all of the characters dialed, there may be too many characters for the modem to process. If the dialing code includes multiple consecutive commas, you may be able to replace them with a single comma by increasing the time-delay represented by a comma. You specify this delay (for Hayes-compatible modems) by including in the modem initialization command S8= followed by the delay you want. To find out how large a time-delay you can specify in the S8 register, see your modem's manual.

*Note* *If you'd like* PROCOMM PLUS *to dial a certain series of characters before each* and every *telephone number—such as the code for your long-distance carrier—instead of inserting a dialing code at the beginning of each telephone number, you can simply insert the required characters in the modem dialing command (followed by a comma). For more information, see Chapter 8.*

### To erase a code

With the Dialing Directory on your screen:

- Press [P].
- Highlight the code you want to erase by pressing [↓] or [↑].
- Press [E].
- To return to the Dialing Directory, press [Esc].

## *Dialing a Computer*

When the Dialing Directory is on your screen, you can call both a Dialing Directory entry or a computer that's not listed in the Dialing Directory.

Also, you can call a single entry in the directory, or you can specify several entries (in a "dialing queue" of up to 15 entries) that you want PROCOMM PLUS to call. PROCOMM PLUS will continue to dial until you connect with one of them.

Also, PROCOMM PLUS gives you two ways of specifying the entry or entries you want to dial—you can type the entry numbers, or you can highlight the entries.

*Note If you specify the entry by typing, you can include one or more long-distance codes before or after the entry number. If you specify the entry by highlighting, a dialing code can be dialed only if it was included with the telephone number in the Dialing Directory entry.*

The dialing queue is particularly useful if you want to connect with any of several bulletin boards, since many boards are often busy.

### To dial an entry (that you specify by typing)

- Press [D].

  PROCOMM PLUS asks which entry you want to dial.

- Type the number of the entry you want to dial.

  You can precede and/or follow the entry number with one or more dialing codes. For example, to dial entry number 4 through a long-distance carrier for which you've assigned dialing code A, type *A4*. For more information about dialing codes, see "Adding or Changing a Dialing Code" in this chapter.

- Press [Enter].

  PROCOMM PLUS opens the Dialing window and dials the number.

```
DIALING DIRECTORY: PCPLUS.DIR

   NAME                                  NUMBER   BAUD PDS D P  SCRIPT
 1 DATASTORM BBS                 1 (314) 875-0583  2400 N81 F D
 2                                                 2400 N81 F D
 3                                                 2400 N81 F D
 4                                                 2400 N81 F D
 5                                                 2400 N81 F D
 6                                                 2400 N81 F D
 7                                                 2400 N81 F D
 8                                                 2400 N81 F D
 9                                                 2400 N81 F D
10                                                 2400 N81 F D

     DIALING: DATASTORM BBS                LAST CONNECTED ON: 00/00/00
      NUMBER: 1 (314) 875-0583           TOTAL COMPLETED CALLS: 0
 SCRIPT FILE:                              WAIT FOR CONNECTION: 45  SECS
   LAST CALL:                              PAUSE BETWEEN CALLS: 4   SECS
 PASS NUMBER: 1                          TIME AT START OF DIAL: 08:30:06PM
ELAPSED TIME: 7                        TIME AT START OF THIS CALL: 08:30:07PM

Choice:   Space Recycle  Del Remove from list  End Change wait  Esc Abort

Alt-Z FOR HELP | ANSI | FDX | 2400 N81 | LOG CLOSED | PRINT OFF | ON-LINE
```

If a connection has not been made within the time shown next to WAIT FOR CONNECTION, PROCOMM PLUS terminates the dialing, waits the number of seconds shown next to PAUSE BETWEEN CALLS and starts dialing again.

## To dial an entry (that you specify by highlighting)

- Highlight the entry you want to dial.

  You can use the [↓], [↑], [Home], [End], [PgUp], and [PgDn] keys to move through the directory entries, or you can press [G] or [F] to go to or find a particular entry. For more information, see "Highlighting an Entry" in this chapter.

  If you have a mouse, you can move the highlight up and down through the entries by moving your mouse in the desired direction.

- Press [Enter] to start the dialing. If you're using a mouse, press the left mouse button.

  PROCOMM PLUS opens the Dialing window and dials the number.

If a connection has not been made within the time shown next to WAIT FOR CONNECTION, PROCOMM PLUS terminates the dialing, waits the number of seconds shown next to PAUSE BETWEEN CALLS and starts dialing again.

If a connection *has* been made, you can redial the number after activating the Dialing Directory:

- Press [Alt]-[D].

OR

- Select DIAL from the Menu line.

  The entry you dialed before is still highlighted.

- Press [Enter].

PROCOMM PLUS redials the number.

## To dial a number not in the directory

- Press [M].
- Type the number you want to dial.

  You can include one or more dialing codes before, within or after the telephone number.

- Press [Enter].

  PROCOMM PLUS opens the Dialing window and dials the number.

If a connection has not been made within the time shown next to WAIT FOR CONNECTION, PROCOMM PLUS terminates the dialing, waits the number of seconds shown next to PAUSE BETWEEN CALLS and starts dialing again.

If a connection *has* been made, you can redial the number after activating the Dialing Directory:

- Press [Alt]-[D].

OR

- Select DIAL from the Menu line.
- Press [M].

  PROCOMM PLUS recalls the number you dialed previously.

- Press [Enter].

PROCOMM PLUS redials the number.

## To dial several entries (that you specify by typing)

- Press [D].

  PROCOMM PLUS asks which entries you want to dial.

- Type the numbers of the entries you want to dial (up to 15 entries); the entries can be separated by spaces, commas or semicolons.

  You can precede and/or follow each entry number with one or more dialing codes.

- Press [Enter].

  PROCOMM PLUS opens the Dialing window and dials the first entry you specified.

If a connection has not been made within the time shown next to WAIT FOR CONNECTION, PROCOMM PLUS:

1. Terminates the dialing.
2. Waits the number of seconds shown next to PAUSE BETWEEN CALLS.
3. Starts dialing again, beginning with the next entry in the queue.

If a connection *has* been made, PROCOMM PLUS deletes the entry from the queue. To begin dialing the remaining entries:

- Press [Alt]-[D].

OR

- Select DIAL from the Menu line.
- Press [D], then press [Enter].

PROCOMM PLUS restarts the dialing, beginning with the first number in the queue.

## To dial several entries (that you specify by highlighting)

- Highlight an entry you want to dial.
- Press [space bar] to mark it.

  PROCOMM PLUS places a pointer next to the entry number to indicate that the entry has been marked.

- Repeat the preceding two steps for each entry you want to dial.

  You can highlight up to 15 entries.

- Press [Enter].

  PROCOMM PLUS opens the Dialing window and dials the first highlighted entry.

If a connection has not been made within the time shown next to WAIT FOR CONNECTION, PROCOMM PLUS:

1. Terminates the dialing.
2. Waits the number of seconds shown next to PAUSE BETWEEN CALLS.
3. Starts dialing again, beginning with the next entry in the queue.

If a connection *has* been made, PROCOMM PLUS deletes the entry from the queue. To begin dialing the remaining entries:

- Press [Alt]-[D].

OR

- Select DIAL from the Menu line.
- Press [Enter].

PROCOMM PLUS restarts the dialing, beginning with the first number in the queue.

*Note If you want to "unmark" a single entry, just highlight it and press* [space bar]. *If you want to "unmark" all entries, press* [C].

## To terminate dialing and restart

To terminate dialing the current entry and restart the dialing:

- Press [space bar].

  PROCOMM PLUS starts waiting the number of seconds shown next to PAUSE BETWEEN CALLS, then starts dialing again. If there is more than one entry in the dialing queue, PROCOMM PLUS starts with the next entry in the queue.

- To start dialing immediately, press [space bar] again.

  If there is only one entry in the dialing queue, PROCOMM PLUS begins dialing it again. If there is more than one entry, PROCOMM PLUS begins dialing the next entry in the queue.

## To delete an entry from the dialing queue

You can delete an entry from the dialing queue while PROCOMM PLUS is dialing it.

- Press [Del].

### To change the wait-for-connection time

The Dialing window shows—next to WAIT FOR CONNECTION—how long PROCOMM PLUS will wait for a connection before it hangs up. You can increase or decrease this time period while the Dialing window is open.

For example, if most of the entries in your Dialing Directory have local telephone numbers, you may need to increase the wait time when dialing long-distance numbers (because dialing long-distance generally takes longer to complete than dialing locally).

With the Dialing window open:

- Press [End].
- Type the new wait time (in seconds).
- Press [Enter].

The new wait time will remain in effect until you exit PROCOMM PLUS. If you want to change the wait time permanently, you can specify it in the Setup facility.

### To cancel all dialing

- Press [Esc].

  Mouse users can press their right mouse button at any time to abort a dialing operation.

  PROCOMM PLUS closes the Dialing window and returns you to the Dialing Directory.

## *Call History Data*

PROCOMM PLUS keeps track of the last date you connected with each entry and the number of times you've connected with each entry.

To display the call history data (with the Dialing Directory on the screen):

- Press [T].

To return to the normal Dialing Directory display:

- Press [T] again twice.

*Note* In addition to the call history data that's kept with the Dialing Directory, PROCOMM PLUS maintains additional data in a file called *PCPLUS.FON*. For each computer to which you've connected, this file shows the name and number of the computer, along with the date, time and duration of the connection.

*PCPLUS.FON* is an ordinary text file that you can view or edit with your word processor. To view or edit this file without leaving *PROCOMM PLUS*, use the [Alt]-[V] or the [Alt]-[A] command (see "View a File" and "Editor" in Chapter 7).

If you don't want to use call logging, you can deactivate it using the Setup facility—for more information, see Chapter 8.

## *Erasing Entries*

You can erase either the highlighted entry or several entries you mark using [space bar].

### To erase a single entry

- Highlight the entry you want to erase.

  See "Highlighting an Entry" in this chapter.

- Press [E].

  PROCOMM PLUS asks you to confirm whether or not you wish to erase the highlighted entry.

- Press [Y] to erase it or [N] to cancel.

### To erase multiple entries

- Highlight one of the entries you want to erase.

  See "Highlighting an Entry" in this chapter.

- Press [space bar] to mark it.

  PROCOMM PLUS places a pointer next to the entry number to indicate that the entry has been marked.

- Repeat the preceding two steps for each entry you want to erase.

- Press [E].

  PROCOMM PLUS asks you to confirm whether or not you wish to erase the marked entries.

- Press [Y] to erase all marked entries or [N] to cancel.

If you press [N] to cancel a multiple entry erase operation, PROCOMM PLUS asks whether you want to erase the highlighted entry.

- Press [Y] to erase it or [N] to cancel.

*Note If you want to "unmark" a single entry, just highlight it, then press [space bar]; to "unmark" all entries, press [C].*

## Attaching Notes to an Entry

With the Dialing Directory on your screen:

- Press [J].

  If the entry does not specify a filename in the NOTE FILE field, PROCOMM PLUS prompts you for the name of the Note file to use. If the entry does specify a Note file, that name is automatically used.

  PROCOMM PLUS now loads the text editor (either PCEDIT or an editor you name in the Setup facility).

- You can now enter any text you like for this entry; for example, you might want to note a reminder to check this system for electronic mail the next time you log on.
- When you've completed your notes, save the file and exit the editor (for PCEDIT, press [Alt]-[X]). PROCOMM PLUS reloads itself and returns to the Dialing Directory.

*Note A Note file can be shared by any number of Dialing Directory entries, or you can use a different Note file for each entry.*

## Printing the Dialing Directory

With the Dialing Directory on your screen:

- Press [L].
- To print the Dialing Directory now, press [Enter].

OR

- To save the printout in a file so that you can print it later, type the filename, then press [Enter].
- If you're ready to print the Directory now, then prepare your printer and press any key to begin the printing.
- To terminate the printing before it's done, press [Esc].

*Note If you're currently connected to another computer, you can send a copy of your Dialing Directory to that computer by typing the COM port your modem is using (rather than a filename) before pressing* [Enter]*; for example, if your modem is using COM1, type* COM1 *before pressing* [Enter].

## *Sorting the Dialing Directory*

- Press [S].

  PROCOMM PLUS prompts you for the field to sort by:

  ***Name*** (the remote system names, sorted in ascending order).

  ***Phone number*** (the system telephone numbers, sorted in ascending order).

  ***Baud rate*** (the baud rate of each system, sorted in descending order).

  ***Total calls*** (the total number of completed calls to each system, sorted in descending order).

  ***Last call*** (the date of the last call to each system, sorted in descending order).

- Press the first character of the desired sort field.

PROCOMM PLUS will redisplay the newly-sorted Dialing Directory in a moment. The Directory can be sorted as many times as you like; each time you sort the Directory, it's also saved to disk.

## *Exiting the Dialing Directory*

- Press [Esc].

  PROCOMM PLUS returns to Terminal mode.

In the next chapter, "Using PROCOMM PLUS Commands", you'll learn the details behind each Terminal mode command.

CHAPTER

# 7

# Using PROCOMM PLUS Commands


Overview ..... 95
Auto Answer ..... 96
Break Key ..... 96
Change Directory ..... 97
Chat Mode ..... 97
Clear Screen ..... 98
Clipboard ..... 99
CR-CR/LF Toggle ..... 101
Dialing Directory ..... 102
DOS Gateway ..... 102
Duplex Toggle ..... 103
Editor ..... 103
Elapsed Time ..... 105
Exit ..... 105
File Directory ..... 106
Hang Up ..... 107
Help ..... 107
Host Mode ..... 109
Init Modem ..... 109
Kermit Server Commands ..... 109
Key Mapping ..... 110
Line/Port Setup ..... 111
Log File On/Off ..... 111
Log File Pause ..... 113
Meta Keys ..... 113
Monitor Mode ..... 117
Printer On/Off ..... 118
Program Information ..... 119
Receive Files ..... 119
Record Mode ..... 122
Redisplay ..... 123
Reset Terminal ..... 125

Screen Pause....125
Screen Snapshot....125
Script Files....126
Send Files....127
Setup Facility....129
Toggle Lines....130
Toggle Status Line....131
Translate Table....131
View a File....132

## *Overview*

This chapter describes each PROCOMM PLUS Terminal mode command.

For your convenience, all commands are available within Terminal mode; additionally, you can also enter most PROCOMM PLUS commands from the Menu line. For information about entering commands, see "Giving PROCOMM PLUS Commands" in Chapter 1.

## Auto Answer

Alt-Y

PROCOMM PLUS can set your modem to automatically answer all incoming calls.

### To turn auto-answer on

- Press Alt-Y.

OR

- Select MODES and then Answer from the Menu line.

*Note When you use this command, PROCOMM PLUS sends to your modem the auto-answer command specified in the Setup facility. If auto-answer doesn't seem to work, your modem may require a different command; check your modem manual to find out what it requires, then change the command using the Setup facility (see in Chapter 8).*

### To turn auto-answer off

If your telephone and your modem are using the same telephone line and you have turned auto-answer on, your modem will answer incoming calls from both a computer and another person. To turn auto-answer off:

- Type *ATS0=0*, then press Enter.

*Note This command works for Hayes-compatible modems. If your modem is not Hayes-compatible, check your modem manual to find out how to turn auto-answer off.*

## Break Key

Alt-B

A *break* is a time delay signal that PROCOMM PLUS sends to the other computer to "get its attention". For instance, you might send a command that you suddenly realized was wrong; to stop the remote computer from processing it, send a break to interrupt the other computer.

- Press Alt-B.

OR

- Select OTHER and then Send Break from the Menu line.

You can specify the length of the break signal using the Setup facility (see Chapter 8).

*Note If the remote computer requires a specific character to recognize a break, you can use a Meta key to send it.*

## Change Directory

Alt-F7

This command lets you change the current directory and the current disk drive.

### To change the current directory

- Press Alt-F7.

OR

- Select CHANGE and then Directory from the Menu line.
- Type the path, then press Enter.

  Examples:

  - Type *A:* to change the current drive to A.
  - Type *\word* to change the current directory to \WORD.
  - Type *d:\telecomm* to change the current path to D:\TELECOMM.

*Note This command is a convenient way to change to the directory that contains files you want to upload.*

## Chat Mode

Alt-O

When you're conversing with someone on-line (each of you is typing to the other), what's entered on the other computer appears in the same place as what you type—so it can be difficult to differentiate one from the other. If you've activated Chat mode, PROCOMM PLUS splits the screen; characters from the remote computer appear on the top, and what you type appears on the bottom.

Chat mode is particularly useful if you're using the CB Simulator on CompuServe.

*Note You can use Meta keys in Chat mode (see "Meta Keys" in this chapter).*

### To activate Chat mode

- Press Alt-O.

OR

- Select MODES and then Chat from the Menu line.

*Note If you had activated logging data to disk (Alt-F1) or printing data (Alt-L) before activating Chat mode, they continue in Chat mode. Also, in Chat mode you can redisplay data that's scrolled out of either the REMOTE or the LOCAL window (press Alt-F6).*

### To edit and send what you type

Unlike Terminal mode, where each character is sent to the remote computer as soon as you type it, what you type in Chat mode is not sent until you end the line by pressing Enter. This is called *block* mode.

- Press Backspace to edit a line.
- Press Enter to send a line to the remote computer.

*Note Chat can also send characters the same way as Terminal mode; use the Setup facility to change the value for Chat Mode from BLOCK to CHARACTER. For more information, refer to Chapter 8.*

### To exit Chat mode

- Press Esc.

  PROCOMM PLUS returns to Terminal mode.

## *Clear Screen* Alt-C

This command clears the screen and resets the screen colors.

- Press Alt-C.

OR

- Select OTHER and then Clear Screen from the Menu line.

*Note Use this command when you've been connected to a system that has changed your screen colors but didn't reset them when it disconnected.*

# Clipboard

Alt-=

PROCOMM PLUS provides a filename "Clipboard" to help automate the selection and transfer of files to your PC from a remote system. Filenames are "cut" from the screen into the Clipboard; later, you can send single filenames, groups of filenames or the entire list to the remote system for processing.

The Clipboard is typically used to select files for downloading from a bulletin board file listing; later, when you're prompted by the BBS for the files you wish to download, PROCOMM PLUS can enter each filename in sequence.

As you cut, PROCOMM PLUS searches the current screen for filenames. The name can be up to eight characters long, followed by a period and an extension of up to three characters.

## To invoke the Clipboard

- Press Alt-=.

OR

- Select File and then Clipboard from the Menu line.

PROCOMM PLUS freezes the current terminal screen and displays a submenu of commands.

## To begin cutting filenames

- Press C.

## To select a filename

- Press ↑ or ↓ to move one filename up or down.
- Press Enter to select the current filename.

## To finish cutting filenames

- Press Esc.

If you need to display another screen of filenames from the remote system, exit the Clipboard submenu back to Terminal mode temporarily with the Esc key, display the a new screen of data and return to the Clipboard with the Alt-= command. In addition, you can capture a long file listing in your Redisplay buffer and cut to the Clipboard from the Redisplay screen.

You can also edit the filenames (from the Clipboard submenu), adding or modifying filenames directly.

### To edit Clipboard filenames

- Press [E].

You can use the standard PROCOMM PLUS editing keys to add, modify or delete filenames.

Once you've completed your Clipboard list, you can send (or "paste") the filename(s) to the remote computer.

*Note Before entering the Clipboard menu, make sure the remote system is ready to receive the list of files you're about to send!*

### To paste a single filename from the Clipboard

- Press [S].

A *Single Paste* sends the top file to the remote computer (with a carriage return) and deletes the filename from the Clipboard, moving all the other filenames up one position.

*Note This option is especially useful when downloading a Clipboard list of files with a protocol like XMODEM; as the remote computer prompts you for each file, you can Single Paste a filename from your Clipboard and remove it automatically.*

### To paste tagged filenames from the Clipboard

- Press [T].

A *Tag Paste* simultaneously sends a number of filenames to the remote computer. Each file is separated from the next with a *separator* character (usually a space, semicolon or carriage return—you select which separator PROCOMM PLUS will use in Setup). The last file in the sequence is followed with a carriage return. You "mark" the files to paste using keys similar to the Dialing Directory. Tagged filenames are not deleted after pasting.

*Note This method works well with multiple-file protocols like ZMODEM or YMODEM.*

### To paste all filenames from the Clipboard

- Press [P].

A *Paste All* simultaneously sends all Clipboard files to the remote computer. As with Tag Paste, each file is separated from the next with a space, semicolon or carriage return. The last file in the sequence is followed with a carriage return. The filenames are not deleted after pasting.

### To exit the Clipboard

- Press [Esc].

## *CR-CR/LF Toggle* [Alt]-[F3]

So that your computer can properly display text sent by a remote system, each line should be followed by both a carriage return (CR) and a line feed (LF). The carriage return moves the cursor to the beginning of the current line, and the line feed moves the cursor to the next line. Most remote systems end lines of text sent to your computer with a carriage return & line feed combination (CR/LF).

If a system ends lines of text with only a carriage return, the cursor will not move down to the next line when a line is full or when [Enter] is pressed (incoming text will "overwrite" the last line). If this happens, toggle this command to CR/LF, and PROCOMM PLUS will add a line feed to every carriage return received.

If text appears double-spaced, both systems are adding line feeds; use this command to omit line feeds.

### To switch between a CR and a CR/LF at the ends of lines

- Press [Alt]-[F3].

OR

- Select CHANGE and then CR-CR/LF Toggle from the Menu line.

You can change the default for this condition using the Setup facility (see "Terminal Options" in Chapter 8).

*Note This command affects only text lines you receive in Terminal mode—it doesn't affect text lines* sent. *If you want to add a line feed to the carriage return in text lines you* send *in Terminal mode when you press* [Enter], *use the Key Mapping command (press* [Alt]-[F8]*) to change the code for the* [Enter] *from ^M (carriage return) to ^M^J (carriage return & line feed). For more information, see "Changing the Keyboard Mapping" in Chapter 8.*

## *Dialing Directory* Alt-D

The names and numbers of the computers you call are stored in a *Dialing Directory.*

### To activate the Dialing Directory

- Press Alt-D.

OR

- Select DIAL DIR from the Menu line.

For more information about using the Dialing Directory, see Chapter 6.

## *DOS Gateway* Alt-F4

PROCOMM PLUS lets you perform DOS commands or run other programs without exiting.

### To access DOS

- Press Alt-F4.

OR

- Select OTHER and then DOS Gateway from the Menu line.

*Note For the DOS Gateway command to work, several things must be set correctly. First, the file* COMMAND.COM *must be present in the root directory of your hard disk or—if you're using a floppy disk system—it must be present on the disk in drive A. The program or the DOS command you want to run (if it's an* external *DOS command like* FORMAT*) must be either in the current directory or in a directory specified in your DOS path. Finally, your computer must have enough memory left to run the program or DOS command.*

### To return to PROCOMM PLUS

- Type *EXIT* at the DOS command prompt, then press Enter.

*Note If you execute other communication programs while you're in DOS,* PROCOMM PLUS *may act erratically when you return. If this happens, reset the line settings (use* Alt-P*) to re-establish the connection.*

## Duplex Toggle

Alt-E

This command toggles the modem between full and half duplex.

- Press Alt-E.

OR

- Select CHANGE and then Echo from the Menu line.

The current duplex mode is always indicated in the Status line as HDX (half duplex) or FDX (full duplex). Half duplex is sometimes referred to as "local echo".

*Note You can change the default duplex mode (the mode in effect when you start PROCOMM PLUS) using the Setup facility—see "Terminal Options" in Chapter 8.*

*Note If characters appear twice (lliikkee tthhiiss), set duplex to full. If you type something that should be displayed on your screen but isn't, set duplex to half.*

## Editor

Alt-A

PROCOMM PLUS includes a fast text editor (called PCEDIT) that you can use from within PROCOMM PLUS. PCEDIT is particularly handy for writing and editing scripts and ASCII text files.

You can also use your own editor for creating or editing files without exiting PROCOMM PLUS. If you prefer to use your own editor rather than PCEDIT, you need to specify the path to your editor (the disk and directory where it's stored) and the command that starts it using the Setup facility (see "File/Path Options" in Chapter 8).

## To access the editor

- Press [Alt]-[A].

OR

- Select FILE and then Editor from the Menu line.

  PROCOMM PLUS displays a window that lets you specify parameters for the editor. These parameters can be anything that—if you were starting your editor from the DOS prompt—you might normally type after the editor command.

  For example, most editors (including PCEDIT) let you specify the name of the file you want to work on by typing the filename after the command that starts the editor. If the editor you're using lets you do so, in the next step you could specify the filename you want to work on with your editor.

- Type the parameters for your editor (if any), then press [Enter].

  PROCOMM PLUS starts the editor.

When you exit the editor, you automatically return to PROCOMM PLUS. You can exit PCEDIT by pressing [Alt]-[X].

***Note*** *To display a list of PCEDIT commands, press [Alt]-[Z] after you start PCEDIT.*

***Note*** *You can run PCEDIT from* outside *of PROCOMM PLUS (at the DOS prompt) by typing* PCEDIT *and pressing [Enter]. You can immediately start editing a specific file by entering its filename before pressing [Enter]. If you're using a color monitor and you want to run PCEDIT in black and white (for example, if you're using a composite monochrome monitor with a color graphics adaptor), type the switch /b before you press [Enter].*

***Note*** *For the Editor command to work, several things must be set correctly. First, the file COMMAND.COM must be present in the root directory of your hard disk or—if you're using a floppy disk system—it must be present on the disk in drive A. The drive and directory where your editor is stored (as well as the command that starts it) must be specified in the Setup facility—see "File/Path Options" in Chapter 8. Finally, your computer must have enough memory left to run your editor.*

## Elapsed Time

Alt-T

PROCOMM PLUS always keeps track of how long you're connected to another computer.

### To display the elapsed time

- Press Alt-T.

OR

- Select OTHER and then Elapsed from the Menu line.

  PROCOMM PLUS displays the current date and time as well as the elapsed time of the current call (if you're currently connected to another computer) or of the last call.

## Exit

Alt-X

### To exit PROCOMM PLUS and return to DOS

- Press Alt-X.

OR

- Select QUIT and then Exit to DOS from the Menu line.

  PROCOMM PLUS asks you to confirm that you want to exit.

- Press Y if you do want to exit, or N to continue in PROCOMM PLUS.
- If you are still connected with another computer, PROCOMM PLUS asks whether you want to hang up.
- Press Y to hang up before exiting PROCOMM PLUS, or press N to exit without hanging up.

*Note If PROCOMM PLUS asks whether you want to hang up and your modem is* **not** *connected with another computer, your modem's CD switch has not been set properly—see "Setting Up Your Modem" in Chapter 1.*

*Note When you exit PROCOMM PLUS without hanging up, your modem remains connected to the remote computer, so you may be charged for connect time after you exit. The time you can remain connected depends on the system you called; some systems disconnect after a few minutes of inactivity.*

*Note Before exiting, save any changes you made in* PROCOMM PLUS *(such as changes in the Setup facility) that you want to be in effect the next time you start* PROCOMM PLUS.

## *File Directory* Alt-F

This command lists the files in any directory. It's particularly useful when you've forgotten the name of a file you want to upload, or when you want to see the files you've just downloaded.

### To view a file directory

- Press Alt-F.

OR

- Select FILE and then Directory from the Menu line.

  PROCOMM PLUS asks which files you want to list.

- Type the file specification.

  You can use the DOS wildcards * and ? to specify the files you want to list; for example, to list all files with the file extension .DOC, type *.DOC.

  You can also add a path with the file specification. For example, to list all files with the file extension .DOC in a directory called C:\FILES, type C:\FILES*.DOC as the file specification. If you omit a path specification, PROCOMM PLUS lists files in the current directory. To list *all* files in a directory that's not the current directory, type the path followed by a backslash; for example, to list all files in the C:\FILES directory, type C:\FILES\ as the file specification.

- Press Enter.

- If MORE appears at the bottom of the list window, press any key to see additional files.

  If MORE does not appear at the bottom of the list window, pressing any key returns you to Terminal mode.

## *Hang Up*

Alt-H

### To disconnect from the remote computer

- Press Alt-H.

OR

- Select OTHER and then Hangup from the Menu line.

  PROCOMM PLUS "hangs up" the telephone line and briefly displays DISCONNECTING in the Status line to indicate that it is breaking the connection.

*Note When you enter this command, PROCOMM PLUS first attempts to hang up by dropping the DTR line; this should hang up the line if you have properly set the DTR switch on your modem (as described under "Setting Up Your Modem" in Chapter 1) and if Drop DTR to hangup in the Setup facility is set to YES (see Chapter 8).*

*If dropping DTR does not hang up the line, PROCOMM PLUS then sends the modem hangup command that's specified in the Setup facility (see "Modem Command Options" in Chapter 8). This should hang up the line, provided that you have made sure that the specified hangup command works for your modem; if necessary, check your modem's manual to find out what hangup command it requires.*

*Note If the Hang Up command doesn't work, see the appendix titled "General Problems" at the back of this manual.*

## *Help*

Alt-Z

Use this command to activate the Help facility.

- If you enter this command in Terminal mode, PROCOMM PLUS displays the Command Menu—a list of the Alt-key commands.
- If you enter this command with the Command Menu on the screen, PROCOMM PLUS displays information about Terminal mode, getting on-line help, the Status line and terminal emulation.
- If you enter this command at any other time, PROCOMM PLUS displays information about what you're currently doing.

## To get Help

- Press Alt-Z.

OR

- Select HELP from the Menu line.

  You can activate the Help facility from the Menu line only when PROCOMM PLUS is in Terminal mode—you can't call it from the Menu line when, for example, you're using the Setup facility or the Dialing Directory.

- To display the next or previous screen of help information, press PgDn or PgUp. If you're using a mouse, you can scroll up or down through the help text by moving your mouse in the desired direction.

## To change Help topics

- Press T from the Help facility.

OR

- Press your left mouse button from the Help facility.

## To close the Command Menu or a help screen

- To close the Command Menu or a help screen, press Esc.

OR

- Press your right mouse button.

## Host Mode

Alt-Q

PROCOMM PLUS has a powerful Host mode that transforms your PC into a complete BBS. Host lets a remote user (including yourself, when you're away) access your computer. Host mode features include password protection, file transfers, operator page, DOS-shell access and electronic mail. For more information about using Host mode, see Chapter 9.

### To start Host mode

- Press Alt-Q.

OR

- Select MODES and then Host from the Menu line.

## Init Modem

Alt-J

This command sends the modem initialization string you've defined in Setup to the current active com port. For more information about the modem initialization string, see "Modem Command Options" in Chapter 8.

### To initialize the modem

- Press Alt-J.

OR

- Select OTHER and then Init Modem from the Menu line.

*Note Initializing the modem may be necessary if you run another program that accesses the same com port as PROCOMM PLUS.*

## Kermit Server Commands

Alt-K

KERMIT is a packet-oriented file transfer protocol often used for micro-to-mainframe communications; it's also frequently available on bulletin boards. The KERMIT *server commands* essentially make another computer (running KERMIT *server mode*) a "slave" to your PC. Your PC transmits commands to be executed on the remote; using these commands can save you numerous keystrokes.

*Note You should use this command only after placing the remote computer into Server mode. If you don't, you'll need to do file transfers using PgUp and PgDn (as described under "Send Files" and "Receive Files").*

### To use the Kermit server commands

- Enter the command required by the remote computer to set it into KERMIT Server mode.
- Press [Alt]-[K].

OR

- Select FILE and then Kermit Srv Cmd from the Menu line.
- Press [1] to GET (receive) a file or [2] to SEND (transmit) a file.
- Type the name of the file you want to get or send, then press [Enter].

  When doing a server GET, the filenames must follow the conventions of the remote system.
- Press [3] (FINISH) to tell the remote computer you are finished with your KERMIT session and want to return to the system level.
- Press [4] (LOGOUT) to terminate KERMIT and log off the remote computer.

## *Key Mapping* [Alt]-[F8]

PROCOMM PLUS lets you remap (redefine) any of 79 keys within each terminal emulator. Redefining a key changes its function (the action or character you produce by pressing the key). You can specify a different set of key mappings for each of the terminal emulations.

*Note Before changing any assignments, make a backup copy of the PCPLUS.KBD file.*

### To change the keyboard mapping

- Press [Alt]-[F8].

OR

- Select Change and then Key Mapping from the Menu line.

For more information, see "Changing the Keyboard Mapping" in Chapter 8.

## Line/Port Setup

Alt-P

This command lets you specify the line settings (baud rate, parity, number of data bits and number of stop bits) and the com port to use for this session.

### To change the line settings or com port

- Press Alt-P.

OR

- Select CHANGE and then Line Settings from the Menu line.

For more information, see "Changing Line and Port Settings" in Chapter 8.

## Log File On/Off

Alt-F1

This command lets you keep a log record of everything that appears on the display when you're connected with another computer.

You can reduce the time you're connected—which reduces your telephone and connect-time charges—by using a log file and reading its contents later, when you're off-line (instead of reading the data as it comes across your screen).

### To turn on file logging

- Press Alt-F1.

OR

- Select FILE and then Toggle Log from the Menu line.

  PROCOMM PLUS asks you to name the log file.

- Type a filename for the log file.

  You can skip this step if you want to use the default filename specified in the Setup facility; unless you've changed it, the default filename is PCPLUS.LOG.

  If you enter a different filename, you can also add the full path for it (including the drive and directory). If you don't specify a path, the file is saved in the current directory.

  If you enter a filename that already exists, the new data is added to the end of the existing file.

- Press [Enter].

  PROCOMM PLUS displays LOG OPEN in the Status line to indicate that data is being logged.

## To turn off file logging

- Press [Alt]-[F1].

OR

- Select FILE and then Toggle Log from the Menu line.

  PROCOMM PLUS displays LOG CLOSED in the Status line to indicate that data is no longer being logged.

*Note If you want to only suspend rather than turn off file logging, use the [Alt]-[F2] command.*

## Log File Pause

Alt-F2

PROCOMM PLUS lets you temporarily suspend file logging to skip some of the data appearing on your screen.

### To suspend file logging

- Press Alt-F2.

OR

- Select FILE and then Hold Log from the Menu line.

  PROCOMM PLUS displays LOG ON HOLD in the Status line to indicate that logging has been suspended.

### To resume file logging

- Press Alt-F2.

OR

- Select FILE and then Hold Log from the Menu line.

  PROCOMM PLUS displays LOG OPEN in the Status line to indicate that data is being logged again.

## Meta Keys

Alt-M

A Meta key is a multi-purpose command key that can store and send a sequence of keystrokes, run external programs or run ASPECT scripts. You create a Meta key by first selecting its TYPE: a *TEXT* sequence, an *ASPECT* script, an external standalone *PROGRAM* or an external *HOOK* program that reads the session parameters from PROCOMM PLUS. Then, once you've identified the function of a Meta key, you can enter the following values in the CONTENTS field:

1. The keystrokes for a TEXT type (up to 50 keystrokes per Meta key).
2. The script to run for an ASPECT type (the script can be in compiled *.ASX* format, or PROCOMM PLUS will attempt to compile an *.ASP* source program automatically).
3. The external *.COM* or *.EXE* program to run for a PROGRAM Meta key.
4. The external *.COM* or *.EXE* program that will HOOK into the parameter values used by PROCOMM PLUS.

Each Meta key file you create can contain up to 10 keys (Alt-1 through Alt-0). The default Meta key file is named PCPLUS.KEY; it's active within PROCOMM PLUS until you specify a different file as part of a Dialing Directory entry, load a new Meta key file or use the ASPECT MLOAD command.

You can use the Alt-M command to change any of your Meta keys or load another set.

### To display the current Meta key set

- Press Alt-M.

OR

- Select CHANGE and then Meta Keys from the Menu line.

### To add or create a Meta key

- Press ↓ or ↑ to move to the key you want to revise.
- Press R.
- Press space bar to toggle between the four Meta key TYPES.
- Press Enter when you're done.
- Type the required contents for this key.

  If you need to edit what you've typed, you can use the editing keys listed in the appendices at the back of this manual.
- Press Enter when you're done.

### To save a Meta key set

After you've added or changed a Meta key, you should save the set if you want to use it the next time you start PROCOMM PLUS. If you don't save the Meta key set, the new key command will only exist for the current session.

- Press S.

  PROCOMM PLUS saves your changes in the the current Meta key set.
- Press Enter.

  PROCOMM PLUS saves the Meta key file in the current directory (or the directory named by the "SET PCPLUS=" environment variable).

### To clear a Meta key set

If you want to create a brand-new Meta key file—that is, one that's entirely different from the current Meta key set—use this command to clear all 10 key definitions.

- Press [C].

*Note This command clears the current Meta key set from memory, but it does not erase the corresponding file stored on disk.*

### To load a different Meta key set

- Press [L].
- Type the filename of the Meta key file to load and press [Enter].

### To create a new Meta key set

- Press [L].
- To create a new set, type a new filename. The extension *.KEY* will be automatically added by PROCOMM PLUS, so don't add it here. The filename can consist of 1 to 8 letters and/or digits.

### To close the Meta key window

- Press [Esc].

### Using a TEXT Meta key

When you "play back" a TEXT Meta key by pressing the appropriate [Alt]-key combination, PROCOMM PLUS automatically "presses" the keys for you, just as if you were actually typing the keys to the remote; this can save you quite a bit of typing time, and can help prevent mistakes.

You can also include control codes in a Meta key for special purposes; for example, you can represent [Enter] being pressed by the characters ^*M*. You can represent [Ctrl]-[C] (which cancels an operation on CompuServe) by the characters ^C. For more information, see "Translating Control Codes" in the Appendices.

*Note You can have a Meta key respond to several successive prompts from the remote computer if you end each response in the key* CONTENTS *with the ^M control code. For example, a User ID Meta key and a password Meta key could be combined into one. If it doesn't work, it's likely that the remote computer doesn't allow "type-ahead" and needs some time to process your response to the first prompt before* PROCOMM PLUS *sends the response to the second prompt; try inserting several pause characters in the key* CONTENTS *after the response to the first prompt. The pause character is a tilde (~) unless you've changed it (as described in Chapter 8).*

## Using an ASPECT Meta key

The *.ASP* and *.ASX* extensions aren't required when using an ASPECT Meta key. PROCOMM PLUS first searches the current drive and then the directory specified in your "SET PCPLUS=" environment variable for a compiled script by that name; if a compiled script isn't found, PROCOMM PLUS will attempt to load and compile a matching *.ASP* source program. The script name will appear at the left of the Status line.

However, you can force PROCOMM PLUS to recompile an ASPECT source program; simply specify a script with the *.ASP* extension in that Meta key's CONTENTS field.

You can also specify a complete drive and path for your ASPECT file, if necessary.

## Using a PROGRAM Meta key

PROGRAM Meta keys allow you to run external programs without exiting PROCOMM PLUS.

*Note When you use a PROGRAM Meta key, the file COMMAND.COM must be present in the root directory of your hard disk or—if you're using a floppy disk system—it must be present on the disk in drive A. Also, the command that starts the program must be specified in the CONTENTS field of the Meta Key window. Your computer must have enough RAM left to run the program.*

If you communicate with several different remote systems, you may want to keep a separate Meta key set for each system; this will allow you to easily remember "which key does what" by always assigning your user ID to [Alt]-[1], your password to [Alt]-[2] and so on.

## Using a HOOK Meta key

HOOK Meta keys are similar in function to PROGRAM keys; they run external programs without exiting PROCOMM PLUS. However, HOOK allows specially-written programs to "read" the values of all PROCOMM PLUS parameters for the current session—for example, a HOOK Meta key might run a program that requires the current baud rate and data/stop bit settings you're using in PROCOMM PLUS. For more information about HOOK, refer to the commented file HOOK.C (included on your distribution diskettes).

*Note Since PROCOMM PLUS passes memory locations to a HOOKed program, HOOK should only be used with programs that have been expressly written for it.*

Although you can have only 10 keys available at any time using the Alt-key combinations, you can use 79 other keys or key combinations for entering up to 10 characters each. To assign a text string to these keys, use the key mapping command Alt-F8. You can specify a different set of these "macro definitions" for each of the terminal emulations (the Alt-key macros are available regardless of which terminal emulation you're using). For more information, see "Changing the Keyboard Mapping" in Chapter 8.

## *Monitor Mode* Ctrl-\

Monitor mode transforms PROCOMM PLUS into a "raw terminal"; data sent from the remote system will appear directly on your screen in IBM Extended graphic format. No filtering, translation or emulation is performed on characters received in Monitor Mode.

There are three special characters: Escape (a highlighted left arrow), the null character (a highlighted zero) and decimal 255 (a highlighted question mark).

With Monitor mode, you can debug emulation and graphics sequences without leaving PROCOMM PLUS.

**To enter Monitor mode**

- Press Ctrl-\.

OR

- Select MODES and then Monitor from the Menu line.

You'll be asked whether or not to simultaneously log this information to disk.

**To log Monitor mode data**

- Press Y.

If you press [Y], PROCOMM PLUS saves the data to a file called PCPLUS.DMP (in the directory specified by the "SET PCPLUS=" environment variable).

**To exit Monitor mode:**

- Press [Esc].

## *Printer On/Off* [Alt]-[L]

Use this command to print data as it's received from the remote computer.

### To start or stop printing data

- Press [Alt]-[L].

OR

- Select OTHER and then Toggle Printer from the Menu line.

  PROCOMM PLUS indicates the current printer status with the message PRINT ON or PRINT OFF in the Status line.

PROCOMM PLUS sends logged data to the DOS device PRN, which is normally the printer that's connected to your LPT1 parallel port. To change your default print device, set the Print Device option in Setup to the desired value (for more information, see "General Options" in Chapter 8).

*Note Since printers typically can't print as fast as modems can transfer data, you may want to use a log file to record data and print the data later (see "Log File On/Off" in this chapter). You can also use a print spooler like the DOS PRINT command (for information about the PRINT command, see your DOS manual). It may also help to set software XON/XOFF flow control to ON (see Chapter 8).*

## Program Information

Alt-I

This command displays an information screen; it contains the PROCOMM PLUS version number, your serial number and a listing of the telephone numbers of DATASTORM's sales office, technical support department and BBS.

- Press Alt-I.

OR

- Select OTHER and then Information from the Menu line.
- To clear the information window from the screen, press any key.

## Receive Files

PgDn

Use this command to receive (or "download") a file from the remote computer.

- Start the download procedure on the remote computer.

  This procedure varies (depending on the system to which you're connected). Usually, the system will tell you how to start its download procedure.

- Press PgDn.

OR

- Select FILE and then Download from the Menu line.

  PROCOMM PLUS displays a window listing the file transfer protocols you can select.

A protocol is basically a set of rules and conventions that both computers use to ensure the error-free transfer of data. You generally don't need to understand the differences between protocols in order to use one; however, you can find the details about the various protocols in the appendix titled "File Transfer Protocols" at the back of this manual.

The current protocol is the default PROCOMM PLUS will use if you don't type a letter or number before pressing [Enter]. The following priority determines the current protocol:

1. The protocol you used the last time you uploaded or downloaded a file since you started this PROCOMM PLUS session.
2. The protocol specified for the entry in the Dialing Directory (if you placed the call instead of answering it).
3. The protocol you picked as a default during the installation process.
4. XMODEM (if you didn't pick a default protocol during installation).

- Type the letter or number next to the protocol you want to use.

  It's important to select a protocol that's available on the remote system! If the transfer is unsuccessful, make sure that your computer and the remote computer are using the same protocol.

You can receive a file regardless of whether the connection with the other computer began with you placing a call or answering a call.

Depending on which protocol you've selected, PROCOMM PLUS may ask you to specify the file you want to download.

*Note If you've selected an external protocol (protocols 1, 2 or 3), PROCOMM PLUS will let you enter any parameters the protocol may require (such as the name of the file to be transferred, the baud rate or the com port to be used). Pressing [Enter] begins the file transfer. To specify an external protocol, see Chapter 8.*

If you've selected KERMIT, ZMODEM, TELINK, MODEM7, SEALINK, COMPUSERVE B, YMODEM or YMODEM-G protocol, you don't need to specify the filename—PROCOMM PLUS uses the filename you told the other computer you wanted to download, and the downloading begins immediately.

If you've selected XMODEM, RASCII, ASCII, WXMODEM, IMODEM, 1K-XMODEM or 1K-XMODEM-G, you need to specify a filename—but PROCOMM PLUS can enter it for you automatically! When you're downloading a file from a computer, you've typically told that computer what file you want to download by the time you get to this step; therefore, the filename you want is already on the screen. PROCOMM PLUS will look on the screen for a filename and will enter the last filename it finds for you (unless you've turned Filename lookup off—see Chapter 8).

*Note The filename you specify doesn't have to match the filename used on the remote computer.*

- If PROCOMM PLUS has entered a filename but it's not what you want to use for the file, edit the filename (using the same keys you used in Chapter 6 for editing a Dialing Directory entry).
- If PROCOMM PLUS has *not* entered a filename for you, type the filename to use for storing the file.

*Note You can specify the path for the file (including the drive and directory) along with the filename. The following priority determines the path to the directory in which PROCOMM PLUS will store the file:*

1. *The path you specify (if any) in the step above.*
2. *The path specified using the Setup facility (see Chapter 8).*
3. *The current directory.*

- Press [Enter].

If you've selected RASCII, XMODEM, 1K-XMODEM, ASCII, WXMODEM, IMODEM or 1K-XMODEM-G and you've entered a filename that already exists, PROCOMM PLUS asks whether you want to overwrite it.

- Press [Y] if you want to overwrite the file, or press [N] to give the file another name.

  If you've selected KERMIT, TELINK, MODEM7, SEALINK,YMODEM or YMODEM-G and you've entered a filename that already exists, PROCOMM PLUS replaces the first character in the filename with a dollar sign ($) character.

  If you've selected ZMODEM and you've entered a filename that already exists, PROCOMM PLUS uses the Crash recovery setting on both machines to determine whether or not to overwrite the file or abort the transfer. For more information on ZMODEM Crash recovery, please refer to Chapter 8.

PROCOMM PLUS begins receiving the file. If you're using any protocol other than ASCII or RASCII protocol, PROCOMM PLUS displays a window that reports on the progress of the transfer. If you're using either ASCII or RASCII protocol, the contents of the file appear on your screen as it is received.

- If you want to abort and end the file transfer before it's done, press [Esc]. Mouse users can press their right mouse button to abort a file transfer.

*Note After you press* [PgDn], *PROCOMM PLUS takes a moment to check how much space is available on your disk before it displays the window listing the available protocols; this figure will be displayed at the top of the Protocol window.*

*Note If it appears that the file transfer does not begin properly, allow the other computer enough time to start its procedure before you begin your download.*

## Record Mode [Alt]-[R]

You can have PROCOMM PLUS record the remote computer's prompts and your responses—such as a log-on procedure—to create a source script file you can compile and use to automate that procedure.

- Press [Alt]-[R].

OR

- Select MODES and then Record from the Menu line.
- Type a filename for the script file you want to create (an extension is optional) and press [Enter].

  The message RECORDING appears in the Status line to indicate that PROCOMM PLUS is recording the remote computer's prompts and what you type in response.
- Start the procedure you want to record.

  For example, if you want to record a log-on procedure, begin by displaying the Dialing Directory.
- When the procedure you want to record is complete, press [Alt]-[R] (or select MODES and then Record from the Menu line) again.

Sometimes you might need to "fine-tune" a source script file created this way before it will run properly; for example, if the script file does not start, try setting the PAUSE commands to a number greater than 1. Extraneous "^M^J" (CR/LF combinations) may have to be removed.

Remember that you can access your editor or word processor to edit the script file by pressing [Alt]-[A] (see "Editor" in this chapter).

*Note If you want to record a log-on procedure, be sure to start recording* before *you call the other computer.*

# Redisplay

Alt-F6

As PROCOMM PLUS displays the characters from the remote system on your PC's screen, the data eventually fills the screen and scrolls off. You can use the REDISPLAY command to "backtrack" one or more screens to display past information. PROCOMM PLUS can redisplay up to approximately the last 64,000 characters, beginning with the most recent screen; you can set the amount of characters the buffer will hold in Setup (see "Display/Sound Options" in Chapter 8).

## To start redisplaying data

- Press Alt-F6.

OR

- Select MODES and then Redisplay from the Menu line.

PROCOMM PLUS displays the last screen-full of data received by your PC and adds a short submenu of commands on the last line.

## To display more data

- Press PgUp or PgDn to move one screen up or down.
- Press ↑ or ↓ to move one line up or down.
- Press Home to display the first screen.
- Press End to display the last screen.

## To search for specific text in the data

- Press F.
- Type the text you want to find.

  You can enter the text in either uppercase or lowercase letters; the search is not case-sensitive.

- Press Enter.

  If PROCOMM PLUS finds the text, it displays the screen it's on and highlights the text.

- To search again for the same text, press F. At the search prompt, simply press Enter.

## To cut filenames to the Clipboard

- Press C.

- The Clipboard submenu replaces the Redisplay submenu. You can now use the Clipboard as if it had been called from Terminal mode; for more information on the Clipboard command, refer to "Clipboard" earlier in this chapter.
- Press [Enter].

### To store the data in a file

- Press [W].
- Type a filename for the file. If the file already exists, the information is appended to the end of the existing text.
- Press [Enter].
- PROCOMM PLUS asks whether you'd like to write all of the data or "mark" a block. Press [E] to write the entire buffer or [M] to mark a block.
- If you choose to write the entire buffer, simply press [E] and [Enter].
- If you choose to mark a block, use the [↑] or [↓] keys to move the highlight to the beginning of the desired text.
- Press [Enter] to mark the beginning of the block.
- Use the [↑] or [↓] keys to highlight the desired text.
- Press [Enter] to mark the end of the block and write the data.

### To print the data

- Press [W].
- Type your printer device (usually *PRN* or *LPT1*).
- Press [Enter].

### To exit Redisplay mode

- Press [Esc]. Mouse users can exit Redisplay mode by pressing the right mouse button.

## Reset Terminal

Alt-U

If a remote system fails to reset your screen at the end of a call (or if line noise has filled your screen with garbage characters), PROCOMM PLUS allows you to reset your terminal. This command clears your screen, places the cursor at the Home position and resets your terminal attributes to their Setup defaults.

- Press Alt-U.

OR

- Select OTHER and then Reset Terminal from the Menu line.

## Screen Pause

Alt-N

If data scrolls off your screen faster than you can read it, this command can pause the display.

- Press Alt-N.

  PROCOMM PLUS tells the remote computer to stop sending data and "freezes" the data on your screen.

- To resume the display, press any key.

*Note When you press Alt-N, PROCOMM PLUS sends an XOFF to the remote computer. When you press a key to resume, PROCOMM PLUS sends an XON to the remote computer.*

## Screen Snapshot

Alt-G

This command lets you store the contents of the screen in a file.

- Press Alt-G.

OR

- Select OTHER and then Screen Snapshot from the Menu line.

  PROCOMM PLUS briefly displays the message SNAPSHOT in the Status line to let you know it has stored the contents of the screen in a file.

The contents of the screen are saved in the file specified using the Setup facility (see Chapter 8). Unless you've changed it, the default filename is PCPLUS.SCR.

If there's already information in the file, the information from the current screen is added at the end.

# Script Files

Alt-F5

A script file is a compiled program that contains a series of commands from PROCOMM PLUS' ASPECT programming language. You can write script files to perform automatic log-ons, unattended file transfers and many other communications tasks. For more information about creating and using script files, see Chapter 1 of your ASPECT SCRIPT LANGUAGE REFERENCE MANUAL.

## To execute a script file

- Press Alt-F5.

OR

- Select FILE and then Run Script from the Menu line.
- If you know the name of the script, type it and then press Enter.

  If you omit the extension, PROCOMM PLUS first searches for a file with the specified name ending with the extension *.ASX* (indicating a compiled ASPECT file); if no such file exists, PROCOMM PLUS then searches for the same filename with a *.ASP* extension (indicating an ASPECT source program). You may specify a full path for the script if you prefer; if you don't specify a path, PROCOMM PLUS first looks in the current directory, then looks in the directory specified by your "SET PCPLUS=" command.

  If a script is found, it's executed and its name appears at the left of the Status line.

  You can also force PROCOMM PLUS to load a source program; simply specify the *.ASP* extension with the filename. This method works even if a compiled script exists with the same name.

***Note*** *PROCOMM PLUS will automatically attempt to compile a .ASP source program before running it; if the compilation is successful, the .ASX file is saved to disk for future use. If the compilation is unsuccessful, an error message appears and you're returned to Terminal mode; an error file will also be created (if possible) with the extension .ERR.*

- If you don't know the name of the script file you want, press Enter.

  PROCOMM PLUS displays a list of the compiled *.ASX* script files in the current directory (or, if that directory contains no script files, in the directory that's specified with the "SET PCPLUS=" command in your AUTOEXEC.BAT file). If there are no script files in either of these directories, PROCOMM PLUS displays the message "NO ASX FILES".

- Press ↓ or ↑ to highlight the script file you want, then press [Enter].

  You can use the [PgDn], [PgUp], [Home], and [End] keys to display additional scripts.

  The name of the script file being executed appears at the left of the Status line.

*Note To access a script that's not in either the current directory or the directory that's specified with the "SET PCPLUS=" environment variable, include a full path with the script name. Additionally, you could use the Change Directory command (press [Alt]-[F7]) or the DOS Gateway (press [Alt]-[F4]) to change to the directory you want before you select the Script Files command.*

### To cancel execution of a script file

- Press [Esc].

  PROCOMM PLUS asks you to confirm that you want to exit the script file.

- Press [Y] to exit, or press [N] to continue.

*Note You can only exit a script file if the SET KEYS script command is OFF (or, if SET KEYS is ON, your script must process the desired script exit key); for more information, see the definition for the SET command in Chapter 2 of your* ASPECT SCRIPT LANGUAGE REFERENCE MANUAL.

## *Send Files* [PgUp]

Use this command to send (or "upload") a file to the remote computer.

- Start the upload procedure on the remote computer.

  This procedure varies, depending on the system you're connected to; the system will usually tell you how to start its upload procedure.

- Press [PgUp].

OR

- Select FILE and then Upload from the Menu line.

  PROCOMM PLUS displays a window listing the file transfer protocols you can select.

A protocol is basically a set of rules and conventions that both computers use to ensure the error-free transfer of data. You generally don't need to understand the differences between protocols in order to use one; if you're interested, however, you can find the details about the various protocols in the Appendices at the back of this manual.

The current protocol is the one PROCOMM PLUS will use if you don't type a letter or number before pressing [Enter]. The following priority determines the current protocol:

1. The protocol you used the last time you uploaded or downloaded a file since you started PROCOMM PLUS.
2. The protocol specified for the entry in the Dialing Directory (if you dialed rather than answered the call).
3. The protocol you picked as a default during the installation process.
4. XMODEM (if you didn't pick a default protocol during installation).

- Type the letter or number next to the protocol you want to use.

  Make sure to select a protocol that's used by the remote system!

*Note If you've selected an external protocol (protocol numbers 1, 2 or 3), PROCOMM PLUS will prompt you for any parameters the protocol may require (such as the name of the file to be transferred, the baud rate or the com port to be used); pressing [Enter] begins the file transfer. To specify an external protocol, see Chapter 8.*

PROCOMM PLUS asks you to specify the name of the file you want to upload. If PROCOMM PLUS finds a filename on the screen, it enters that filename for you (since that filename is probably the one you want to upload). PROCOMM PLUS won't do this if you've turned Filename lookup off—see Chapter 8. If there's more than one filename on the screen, PROCOMM PLUS enters the last filename it finds.

*Note The filename you specify for uploading doesn't have to match the filename you've told the remote computer you're going to send.*

- If PROCOMM PLUS has entered a filename but it's **not** the file you want to send, edit the filename (using the same keys you used in Chapter 6 for editing a Dialing Directory entry).
- If PROCOMM PLUS has *not* entered a filename for you, type the name of the file you want to send.

*Note You can specify the path to the file along with the filename. The following priority determines the path to the directory where PROCOMM PLUS will look for the file:*

1. *The path you specify (if any) in the step above.*
2. *The current directory.*

- Press [Enter].

PROCOMM PLUS begins sending the file. If you're using any protocol other than ASCII or RASCII, PROCOMM PLUS displays a window that reports on the progress of the transfer (including the estimated time required). If you have the ASCII protocol option *Echo Locally* set to YES in Setup, ASCII and RASCII uploads will also be displayed to your local screen.

- If you want to abort the file transfer before it's done, press [Esc].

You can send a file regardless of whether the connection with the other computer began with you placing a call or answering a call.

If the transfer is unsuccessful, make sure that your computer and the remote computer are using the same protocol.

*Note Many bulletin boards have public-domain software programs that let you "archive" files so they take less time to transfer. Archiving files can save you trouble and reduce transfer time.*

## *Setup Facility* [Alt]-[S]

The Setup facility lets you customize PROCOMM PLUS to suit your particular preferences and applications.

To use the Setup facility:

- Press [Alt]-[S].

OR

- Select CHANGE and then Setup from the Menu line.

For more information, see "Using the Setup Facility" in Chapter 8.

# Toggle Lines

Ctrl-[-]

This command toggles through the "video modes" *supported by your PC's hardware.* PROCOMM PLUS supports 5 video modes, each of which displays a different number of rows and columns on your screen.

## To toggle video modes

- Press Ctrl-[-].

OR

- Select CHANGE and then Toggle Lines from the Menu line.

  PROCOMM PLUS switches to the next available mode. The five video modes are:

  - *DOS MODE.* PROCOMM PLUS uses the same mode as DOS was using at startup. If you toggle your video mode to another value, you may not be able to return to this mode after exiting PROCOMM PLUS. This mode is supported by all hardware.
  - *25 X 80.* The standard 25 row by 80 column display. This mode is supported by all hardware.
  - *EXTRA X 80.* The screen displays 43 lines (for EGA systems) or the number of VGA extra lines (specified in Setup) by 80 columns. **This mode is only supported by EGA and VGA adaptors and monitors.**
  - *USER MODE.* This mode works in conjunction with the User Video Mode value (specified in Setup) to place PROCOMM PLUS in any video mode your graphics adaptor and monitor can display. PROCOMM PLUS calls the video BIOS and requests a switch to the new value. **This mode is only supported by VGA adaptors and monitors (some "super EGA" adaptors can also support USER MODE).**
  - *EXTRA X USER.* PROCOMM PLUS displays the number of VGA extra lines you specified in Setup by the number of columns corresponding to your User Video Mode value. **This mode is only supported by VGA adaptors and monitors (some "super EGA" adaptors can also support EXTRA X USER).**

*Note* *PROCOMM PLUS resets your screen and returns the cursor to the Home position when you toggle to another video mode.*

For more information on each of these video modes and the User Video Mode Setup field, please refer to "Display/Sound Options" in Chapter 8.

## Toggle Status Line

Ctrl-1

If the remote computer requires all 25 lines of your PC's screen, you can toggle the Status line ON and OFF with this command.

- Press Ctrl-1.

OR

- Select CHANGE and then Toggle Status from the Menu line.

*Note If a PROCOMM PLUS function normally displays information on the 25th line (for example, an ASCII upload), toggling the Status line to OFF will disable that display.*

## Translate Table

Alt-W

Certain remote computers may send you unwanted characters; for example, "garbage" or "strange-looking" characters may appear on your display and clutter up your text files, or they may cause your computer's speaker to beep. This command lets you delete or replace unwanted characters using the "translation table".

To change the translation table:

- Press Alt-W.

OR

- Select CHANGE and then Translation from the Menu line.

For more information, see Chapter 8.

# View a File

Alt-V

PROCOMM PLUS lets you view (read) the contents of an ASCII text file without exiting PROCOMM PLUS. This is particularly useful when you've just downloaded a file and you want to read it.

- Press Alt-V.

OR

- Select FILE and then View File from the Menu line.
- Type the name of the file you want to read. You can specify the path to the file, if it's not in the current directory.
- Press Enter.

  PROCOMM PLUS displays the first screen page of the file.
- Press PgDn to move to the next page.
- Press PgUp to move to the preceding page.
- Press Home to move to the beginning of the file.
- Press Esc to exit.

*Note* *PROCOMM PLUS normally uses a built-in view utility for displaying the contents of the file. If you want to use an external utility for the View command, you can specify it using the Setup facility (see Chapter 8).*

CHAPTER

# 8

# Customizing PROCOMM PLUS


Overview ..... 134
Changing Line and Port Settings ..... 135
Using the Setup Facility ..... 137
*Modem General Options* ..... *141*
*Modem Command Options* ..... *144*
*Modem Result Messages* ..... *149*
*Modem Port Assignments* ..... *151*
*Terminal Options* ..... *153*
*Display/Sound Options* ..... *158*
*General Options* ..... *161*
*Host Mode Options* ..... *166*
*File/Path Options* ..... *169*
*Terminal Color Options* ..... *170*
*General Protocol Options* ..... *173*
*ASCII Transfer Options* ..... *175*
*Kermit Options* ..... *178*
*ZMODEM Options* ..... *179*
*External Protocol Options* ..... *184*
*PCEDIT Options* ..... *186*
*Editor Color Options* ..... *188*
Changing the Translation Table ..... 189
Changing the Keyboard Mapping ..... 192

# Overview

You should be able to use PROCOMM PLUS "right out of the box". However, you can quickly and easily change a wide variety of operating characteristics to suit your personal preferences, streamline your daily communications tasks or meet the requirements of special situations. This chapter describes how to customize PROCOMM PLUS to meet your needs.

The items changed most often are:

- The COM port used by your modem (see "Changing Line and Port Settings").
- The colors of the various windows displayed by PROCOMM PLUS (see "Color Options").
- The directory where you store files downloaded from another computer (see "File/Path Options").
- If you want PROCOMM PLUS to automatically switch its baud rate when a connection is made at a different baud rate, you will need to turn auto baud detect ON (see "Modem General Options"), and you may need to change the number after the X in the modem's initialization command (see "Modem Command Options").
- If you're using a modem that wasn't included in PCINSTAL, you *must* specify what your modem requires for the parameters described under "Modem Command Options" and "Modem Result Messages" later in this chapter. See your modem manual to find out what it requires for these parameters.
- If your system has a composite monochrome monitor connected to a color/graphics display board, you should set all colors to black and white (after starting PROCOMM PLUS with the /b switch—see "Other Ways of Starting PROCOMM PLUS" in Chapter 1).

*Note For most communications applications, you won't need to make any other changes (so you don't need to read through this entire chapter); for an overview of what you can change, however, take a moment to scan this chapter's table of contents.*

*Note Remember, the PCINSTAL program can be used to customize PROCOMM PLUS if you add a new modem, graphics card or monitor. For more information, see Chapter 1.*

## Changing Line and Port Settings

Alt-P

This command lets you specify the line settings (baud rate, parity, number of data bits and number of stop bits) and the com port to use for communcations.

If you always place (rather than answer) calls to other computers, you may not need to use this command to change the line settings. When you dial another computer, PROCOMM PLUS changes the current line settings to those specified in the Dialing Directory.

The current line settings are indicated in the center of the Status line.

This command lets you:

- Change your line settings after you've connected to a computer you've dialed (in case your display shows "garbage" characters).
- Change your line settings to match those used by a computer that will be calling your PC.
- Change the baud rate (if the CONNECT message indicates that the connection has been made at a different baud rate from that at which PROCOMM PLUS is already set). This won't be necessary if auto baud detect is enabled; see "Auto baud detect" under "Modem General Options" later in this chapter.

## To change the current line settings

- Press Alt-P.

OR

- Select Change and then Line Settings from the Menu line.

```
CURRENT SETTINGS:  2400,N,8,1,COM1

BAUD RATE   PARITY     DATA BITS   STOP BITS   PORT

1)    300   N) NONE    Alt-7) 7    Alt-1) 1    F1) COM1
2)   1200   E) EVEN    Alt-8) 8    Alt-2) 2    F2) COM2
3)   2400   O) ODD                            F3) COM3
4)   4800   M) MARK                           F4) COM4
5)   9600   S) SPACE                          F5) COM5
6)  19200                                     F6) COM6
7)  38400                                     F7) COM7
8)  57600   Alt-N) N/8/1                      F8) COM8
9) 115200   Alt-E) E/7/1

Esc) Exit   Alt-S) Save and Exit  YOUR CHOICE:

LINE/PORT SETUP
```

Common choices for parity, data bits, and stop bits.

*Note Some on-line services base their charges on the baud rate used (usually, the slower the baud rate, the lower the charge). If speed is not a major issue, you might be able to save some money with a lower baud rate.*

Most bulletin boards and PC's use no parity, 8 data bits and 1 stop bit (N-8-1), while many mainframe computers require even parity, 7 data bits, and 1 stop bit (E-7-1). When you call online services like CompuServe or public networks like Telenet and Tymnet, be sure to use the latter.

## To specify the baud rate

- Type the number shown next to the baud rate you want to use.

## To specify the parity

- Type the letter shown next to the parity you want to use.

### To specify the data bits or stop bits

- Hold down the [Alt] key and type the number shown next to the data bits or stop bits you want to use.

### To select a combination of parity, data bits, and stop bits

- Press [Alt]-[N] to select no parity, eight data bits, and one stop bit.

OR

- Press [Alt]-[E] to select even parity, seven data bits, and one stop bit.

### To specify the COM port for your modem

- Press the function key, [F1] through [F8], shown next to the COM port your modem is using.

*Note If you select COM3 through COM8, be sure to specify the correct base address and interrupt line for the port—see "Modem Port Assignments" in this chapter.*

*Note The current line settings are always displayed at the top of the Settings window; if you make any changes, the settings will be updated immediately.*

### To save your changes on disk and exit

You can save the line settings you've specified so that they will be in effect the next time you start PROCOMM PLUS.

- Press [Alt]-[S].

### To exit without saving changes

- Press [Esc].

  PROCOMM PLUS will use the line settings you've specified only until you end the current session.

## *Using the Setup Facility* [Alt]-[S]

You can change the operation of PROCOMM PLUS using the Setup facility, which displays a menu of nine option "groups". When you select a group, PROCOMM PLUS displays either a screen containing parameter values currently in effect or a submenu offering additional groups under the same category.

*Note The Setup facility is accessed through an external program called* PCSETUP. *To use it, you must ensure the following:*

- *If you're using a hard disk system, the file* COMMAND.COM *must be present in the root directory of your hard disk, and the file* PCSETUP.EXE *must be present in either the current directory or the directory specified with the "*PCPLUS=*" environment variable in your* AUTOEXEC.BAT *file.*
- *If you're using a floppy disk system, the file* COMMAND.COM *must be present on the disk in drive A, and the file* PCSETUP.EXE *must be present on the disk in the current drive.*
- *Your computer must have enough RAM left to run* PCSETUP.

## To select the option you want to change

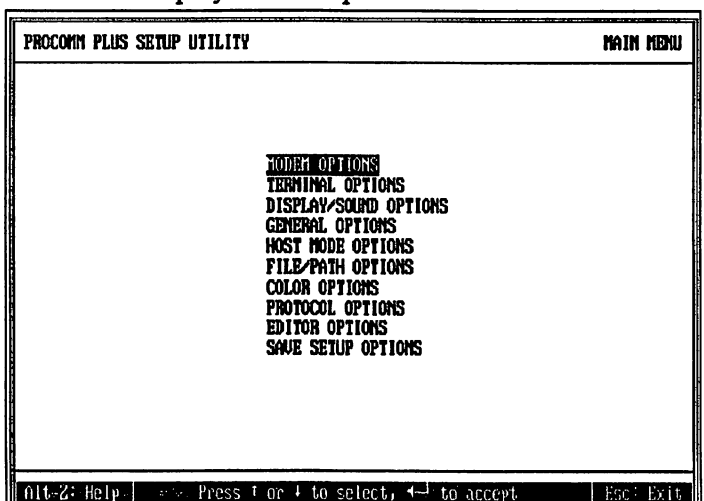
■ Press Alt-S.

OR

■ Select CHANGE and then Setup from the Menu line.

*Note If your PC has a mouse, you can call the Menu line by pressing either mouse button. To select the Setup facility, highlight CHANGE on the Menu line by moving your mouse left or right, then press the left mouse button to display the CHANGE submenu. Highlight Setup and press the left mouse button.*

PROCOMM PLUS displays the Setup Main Menu.



*Note You can also access the Setup facility from DOS using the PCSETUP program. If you've installed PROCOMM PLUS on a hard disk system, PCSETUP is in the directory where you installed PROCOMM PLUS. If you've installed PROCOMM PLUS on a floppy disk system, PCSETUP is on your PROCOMM PLUS work disk.*

- Select the option group you want to see:
  - Press the letter key corresponding to the first letter in the desired option group.

  OR
  - Use the ⇩ key to highlight it, then press [Enter].

*Note Mouse users can select an option group by highlighting it and pressing the left mouse button.*

- If you selected MODEM OPTIONS, COLOR OPTIONS, PROTOCOL OPTIONS or EDITOR OPTIONS, select the appropriate submenu you want to see, then press [Enter].

  PROCOMM PLUS displays a parameter screen.

- Press the letter key corresponding to the parameter you want to change.

  PROCOMM PLUS moves the cursor to the parameter you selected.

You can change a parameter in one of four ways:

- By selecting from one of several choices (such as ON and OFF).
- By typing a word or phrase (such as a message).
- By typing a number (such as the length of a time interval).
- By selecting from one of several colors (for windows).

### To change a multiple-choice parameter

When the cursor is in the parameter you want to change:

- Press [space bar] to display another option.

OR

- For the Terminal Emulation value, highlight the choice you want (using ⇩ or ⇧).
- Press [Enter] to use the displayed option, or press [Esc] to cancel the change.

*Note Throughout the rest of this chapter, the default value (preset when you start* PROCOMM PLUS *for the first time) is shown underlined.*

## To change a word or phrase in a parameter

When the cursor is in the value you want to change, use these keys to change it:

| To ... | Press ... |
|---|---|
| Move the cursor to the left | ← |
| Move the cursor to the right | → |
| Move the cursor to the beginning | Home |
| Move the cursor to the end | End |
| Switch between Insert and Overtype mode for entering characters | Ins |
| Delete the character at the cursor | Del |
| Delete the character to the left of the cursor | Backspace |
| Delete all characters from the cursor to the end | Ctrl–End |

## To change a number or character parameter

When the cursor is in the parameter you want to change:

- Type the number or character.

  If the number is some time interval, PROCOMM PLUS indicates the unit to use (for example, whether the units are seconds or milliseconds).

- Press Enter to use the new value, or press Esc to cancel the change.

## To save your changes and exit

If you want your changes to be in effect the next time you use PROCOMM PLUS, you must save the changes before exiting.

- Press Esc to return to the Setup Main Menu.
- Select SAVE SETUP OPTIONS.
- Press Esc to exit the Setup facility.

  PROCOMM PLUS returns to Terminal mode.

### To exit without saving your changes

If you exit without saving your changes, they'll be in effect only during this PROCOMM PLUS session.

- Press [Esc] to return to the Setup Main Menu.
- Press [Esc].
- Press [N] if you want to exit without saving your changes.

OR

- Press [Y] if you want to save your changes so that they will be in effect the next time you start PROCOMM PLUS.

You can also press [F10] to exit the Setup facility immediately from any Setup screen. Any changes you've made are automatically saved.

## Modem General Options

When you select MODEM OPTIONS from the Setup Main Menu and then GENERAL OPTIONS from the Setup Modem Options submenu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                          MODEM GENERAL OPTIONS

A- Wait for connection ..... 45 secs

B- Pause between calls ..... 1 secs

C- Auto baud detect ........ ON

D- Drop DTR between calls .. YES

E- Send CR between calls ... YES

F- Send init if CD high .... NO

G- Maximum dial attempts ... 3

Alt-Z: Help   Press the letter of the option to change:   Esc: Exit
```

**Wait for connection.** Specifies how long PROCOMM PLUS will wait for a connection after dialing. The default value is 45 seconds.

You can override this parameter when you're dialing— see "To change the wait-for-connection time" under "Dialing a Computer" in Chapter 6.

**Pause between calls.** Specifies how long PROCOMM PLUS will pause before dialing another number (after an unsuccessful attempt to dial the preceding number). The default value is 4 seconds. This value also controls the number of seconds that elapse between redial attempts.

*Note PROCOMM PLUS uses this time to re-initialize the modem between calls. If you reduce this time and find that every other call you dial is not dialed properly, increase the pause between calls to allow the modem to be initialized.*

**Auto baud detect.** Specifies whether PROCOMM PLUS will automatically change its baud rate when a connection is made at a different baud rate.

| | |
|---|---|
| YES | If a connection is made at a baud rate that's different from that at which PROCOMM PLUS is set, PROCOMM PLUS will automatically switch its baud rate. |
| NO | PROCOMM PLUS will not automatically change its baud rate. |

*Note If you select YES, make sure you have specified the proper modem result messages (see "Modem Result Messages") and the proper X command in the modem initialization command so that PROCOMM PLUS can recognize those messages (see "Initialization command" under "Modem Command Options"). PROCOMM PLUS requires this to determine the baud rate at which the connection was made.*

**Drop DTR between calls.** Specifies whether you want PROCOMM PLUS to drop the DTR line (which prevents most modems from answering).

| | |
|---|---|
| YES | PROCOMM PLUS will drop the DTR line. |
| NO | PROCOMM PLUS will not drop the DTR line. |

**Send CR between calls.** Specifies whether you want PROCOMM PLUS to send a carriage return to the modem between each call. This serves to prepare the modem for the next call.

| | |
|---|---|
| YES | PROCOMM PLUS will send a carriage return to the modem between each call. |
| NO | PROCOMM PLUS will not send a carriage return between each call. |

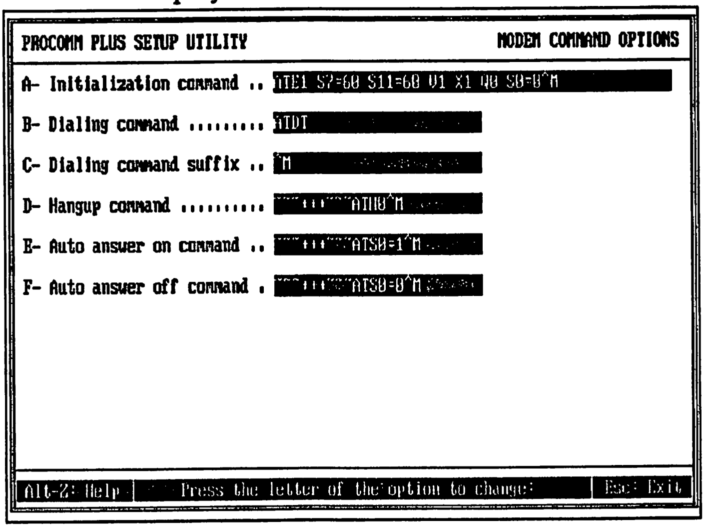
**Send init if CD high.** Specifies whether you want PROCOMM PLUS to send the initialization command each time you start PROCOMM PLUS if the CD line is *high*. Normally, the CD line is high only when your computer is connected to another computer; however, it may be high at other times if the CD switch on your modem is not set properly. For information about the initialization command, see the "Initialization command" under "Modem Command Options").

| | |
|---|---|
| YES | PROCOMM PLUS will send the initialization command each time you start PROCOMM PLUS. |
| NO | PROCOMM PLUS will not send the initialization command each time you start PROCOMM PLUS. This setting is useful if you exit PROCOMM PLUS without disconnecting and later return to your connection without sending the initialization command again.<br><br>*Note* You can send the initialization command to the modem from Terminal mode with the [Alt]-[J] command. |

**Maximum dial attempts.** Controls how many times PROCOMM PLUS will attempt to dial a number. Values can range from 1 to 999, with 999 attempts as the default. A value of 1 specifies a single dialing attempt (with no redialing).

## Modem Command Options

When you select MODEM OPTIONS from the Setup Main Menu and then MODEM COMMANDS from the Setup Modem Options submenu, PROCOMM PLUS displays this screen:




**Initialization command.** Specifies a series of commands that PROCOMM PLUS sends to the modem every time you start PROCOMM PLUS, exit Host mode or use the Init Modem Terminal mode command. Note that this command may appear differently on your screen if you specified a different modem during installation.

| | |
|---|---|
| **AT** | Tells the modem that modem commands follow. |
| **E1** | Tells the modem to echo what you type (display it on your screen). |
| **S7=60** | Tells the modem to wait 60 seconds for a signal from the other computer. See your modem's manual for the minimum and maximum wait time you can enter. |
| **S11=60** | Tells the modem to use 60 milliseconds as the duration and spacing of the tones in tone dialing. See your modem's manual for the minimum and maximum tone duration and spacing you can enter. |

| | |
|---|---|
| **V1** | Tells the modem to use words, rather than numbers, in the result messages it sends to PROCOMM PLUS. |
| **X1** | Tells the modem to use an extended set of result messages. The number after the *X* specifies which set of result messages the modem will send to PROCOMM PLUS, which uses these messages to determine whether a connection has been made and, if so, the baud rate at which the connection has been made. Check your modem manual to see what number you should specify after the *X* so that the modem uses its full range of result messages. Also, for certain modems, the number after the *X* specifies additional capabilities; check your modem's manual to determine whether this is true for your modem. |
| **Q0** | Instructs your modem to send the result messages to PROCOMM PLUS. If this command is omitted, the modem will not send messages (regardless of the other commands in the string). |

**S0=0**

Tells the modem *not* to automatically answer every call. Many modems have a switch that you can set to tell the modem to answer all calls automatically. If you *do* want to use this feature, change S0=0 to S0=1. If you want your modem to answer all calls after the *n*th ring, change it to S0=*n* (for example, to have your modem answer all calls after the second ring, change S0=0 to S0=2).

It's convenient to have your modem set to answer all calls automatically only if you have a separate telephone line connected only to your modem. If you use one line for both your telephone and your modem, you should *not* tell your modem to answer every call (and you should therefore leave S0=0 unchanged in the modem initialization command).

Even if you leave this as S0=0, you can tell your modem to answer every call automatically by pressing [Alt]-[Y] (see the paragraph beginning "Auto answer on command" below).

*Note* If you're using a special modem/voice switching device, it may automatically "route" calls meant for the modem; check the manual to see if you can enable auto answer.

**^M**

Tells the modem that the command string is complete.

Note: This is a control code that PROCOMM PLUS translates as a carriage return. For more information, see "Translating Control Codes" in the appendices at the back of this manual.

*Note If you don't want* PROCOMM PLUS *to send the initialization command when you start, or if the modem is not initializing properly, see "Send init if CD high" on page 143 of this manual.*

**Dialing command.** Specifies the command that tells your modem to dial. The default ATDT is suitable for all Hayes-compatible modems.

| | |
|---|---|
| AT | Tells the modem that a modem command follows. |
| D | Tells the modem to dial. |
| T | Tells the modem to use tone dialing. If you want the modem to use pulse dialing, specify P instead of T. |

**Dialing command suffix.** Specifies the character that tells your modem to begin executing a dialing command. The ^M control code, which is translated as a carriage return, is suitable for all Hayes-compatible modems.

**Hangup command.** Specifies the command that tells the modem to hang up the line (disconnect). The default value is suitable for all Hayes-compatible modems.

The command you specify here is what PROCOMM PLUS sends to your modem when you press [Alt]-[H] and either dropping the DTR line does not hang up the line or Drop DTR to hangup is set to NO. For more information, see the note under "Hang Up" in Chapter 7.

| | |
|---|---|
| ~~~ | Delays 1-1/2 seconds. |
| +++ | Tells the modem to switch into its command mode. |
| ~~~ | Delays another 1-1/2 seconds. The tilde (~) is the default pause character; to specify a different character for indicating a pause, see "General Options" in this chapter. |
| AT | Tells the modem that a modem command follows. |
| H0 | Tells the modem to hang up the line. |
| ^M | Tells the modem that the command is complete. |

*Note If the Hang Up command doesn't work, see the appendix titled "General Problems".*

**Auto answer on command.** Specifies the command that tells the modem to answer all calls automatically. The default value is suitable for all Hayes-compatible modems.

The command you specify here is what PROCOMM PLUS gives to your modem when you press [Alt]-[Y] or when you start Host mode.

| | |
|---|---|
| ~~~ | Delays 1-1/2 seconds. |
| +++ | Tells the modem to switch into its command mode. |
| ~~~ | Delays another 1-1/2 seconds. The tilde (~) is the default pause character; to specify a different character for indicating a pause, see "General Options" in this chapter. |
| AT | Tells the modem that a modem command follows. |
| S0=1 | Tells the modem to automatically answer all calls after the first ring. |
| ^M | Tells the modem that the command is complete. |

*Note If you want your modem to answer all calls after the nth ring rather than after the first ring, replace the "1" with the desired number of rings you want; for example, to have your modem answer all calls after the second ring, change S0=1 to S0=2.*

**Auto answer off command.** Specifies the command that tells the modem to stop answering all calls automatically. The default value is suitable for all Hayes-compatible modems, and is similar to the Auto answer on command (except that the S0 register is set to S0=0). PROCOMM PLUS sends this command to your modem each time you exit Host mode.

## Modem Result Messages

When you select MODEM OPTIONS from the Setup Main Menu and then RESULT MESSAGES from the Setup Modem Options submenu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                          MODEM RESULT MESSAGES

MODEM CONNECT MESSAGES

A- 300 baud message ......  CONNECT^M
B- 1200 baud message .....  CONNECT 1200
C- 2400 baud message .....  CONNECT 2400
D- 4800 baud message .....  CONNECT 4800
E- 9600 baud message .....  CONNECT 9600
F- 19200 baud message ....  CONNECT 19200
G- 38400 baud message ....  CONNECT 38400

MODEM NO CONNECT MESSAGES

H- Message 1 .............  NO CARRIER
I- Message 2 .............  BUSY
J- Message 3 .............  VOICE
K- Message 4 .............  TIMEOUT

Alt-Z: Help   Press the letter of the option to change:   Esc: Exit
```

When you attempt to make a connection with another computer, your modem indicates the result by sending a "result message" (also called a "status message" or a "status code") to your PC. This message—such as CONNECT or NO CARRIER— appears on your display; in addition, PROCOMM PLUS uses it to decide whether to maintain the connection or to hang up and dial again.

To ensure that PROCOMM PLUS recognizes the messages sent by your modem (different modems send different messages), you need to tell PROCOMM PLUS what those messages are. By changing the messages in the MODEM RESULT MESSAGES submenu, you can change the messages PROCOMM PLUS will recognize. Check your modem's manual to find out what messages it sends.

- If your modem uses different messages for any of the connect or no-connect conditions, change the messages in the MODEM RESULT MESSAGES submenu. **Messages are case-sensitive, so it's important to enter messages exactly as they appear in your modem manual!**

**300 baud connect message.** Specifies the message your modem sends if a connection is made at 300 baud. The default message is CONNECT^M.

*Note The default message for 300 baud is followed by the ^M control code, which represents a carriage-return.* PROCOMM PLUS *checks the connect message coming from your modem to determine the baud rate at which the connection has been made. The ^M at the end of the message enables* PROCOMM PLUS *to distinguish the default connect message for 300 baud from the default connect messages for other baud rates.*

**1200 baud connect message.** Specifies the message your modem sends if a connection is made at 1200 baud. The default message is CONNECT 1200.

**2400 baud connect message.** Specifies the message your modem sends if a connection is made at 2400 baud. The default message is CONNECT 2400.

**4800 baud connect message.** Specifies the message your modem sends if a connection is made at 4800 baud. The default message is CONNECT 4800.

**9600 baud connect message.** Specifies the message your modem sends if a connection is made at 9600 baud. The default message is CONNECT 9600.

**19200 baud connect message.** Specifies the message your modem sends if a connection is made at 19200 baud. The default message is CONNECT 19200.

**38400 baud connect message.** Specifies the message your modem sends if a connection is made at 38400 baud. The default message is CONNECT 38400.

**No connect message 1.** Specifies a message your modem sends if a connection is not made. The default message is NO CARRIER.

**No connect message 2.** Specifies a message your modem sends if a connection is not made. The default message is BUSY.

**No connect message 3.** Specifies a message your modem sends if a connection is not made. The default message is VOICE.

**No connect message 4.** Specifies a message your modem sends if a connection is not made. The default message is TIMEOUT.

## Modem Port Assignments

When you select MODEM OPTIONS from the Setup Main Menu and then PORT ASSIGNMENTS from the Setup Modem Options submenu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                  MODEM PORT ASSIGNMENTS

                 BASE     IRQ
                ADDRESS   LINE

A- COM1 ......  0x3F8     IRQ4

B- COM2 ......  0x2F8     IRQ3

C- COM3 ......  0x3E8     IRQ4

D- COM4 ......  0x2E8     IRQ3

E- COM5 ......  0x3F8     IRQ4

F- COM6 ......  0x3F8     IRQ4

G- COM7 ......  0x3F8     IRQ4

H- COM8 ......  0x3F8     IRQ4

Alt-Z: Help:  Press the letter of the option to change:   Esc: Exit
```

PROCOMM PLUS is capable of working with any of eight COM ports, numbered COM1 through COM8; this screen allows you to select the base address and the interrupt line for each com port.

When you choose a COM port to change, PROCOMM PLUS puts the cursor in the base address. After you press [Enter], it moves the cursor to the IRQ line for that port.

*Note You normally need not be concerned with these values (unless you are installing a COM port from COM3 through COM8). If you are installing one of these com ports, see the documentation accompanying the hardware you're installing to find out how to set the base address and IRQ line for that port on the hardware. If you're using a PS/2 computer, these are the base address and IRQ lines usually used:*

| COM port | Base Address | IRQ Line |
|---|---|---|
| *COM1* | *3F8* | *IRQ4* |
| *COM2* | *2F8* | *IRQ3* |
| *COM3* | *3220* | *IRQ3* |
| *COM4* | *3228* | *IRQ3* |
| *COM5* | *4220* | *IRQ3* |
| *COM6* | *4228* | *IRQ3* |
| *COM7* | *5220* | *IRQ3* |
| *COM8* | *5228* | *IRQ3* |

## Terminal Options

When you select TERMINAL OPTIONS from the Setup Main Menu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                  TERMINAL OPTIONS

A- Terminal emulation ........ ANSI      K- EGA/VGA true underline ... OFF
B- Duplex ..................... FULL      L- Terminal width ........... 80
C- Soft flow ctrl (XON/XOFF) . OFF       M- ANSI 7 or 8 bit commands . 7 BIT
D- Hard flow ctrl (RTS/CTS) .. OFF
E- Line wrap .................. ON
F- Screen scroll .............. ON
G- CR translation ............ CR
H- BS translation ............ DESTRUCTIVE
I- Break length (millisecs) .. 300
J- Enquiry (ENQ) ............. OFF

Alt-Z: Help   Press the letter of the option to change:   Esc: Exit
```

**Terminal emulation.** Specifies the terminal type PROCOMM PLUS will "imitate" when connected to another computer. You can choose from any of 33 terminals. For more information about terminal emulation, see "Changing the Keyboard Mapping" in this chapter, which describes how to change the key assignments for any emulator. The appendix titled "Terminal Emulation" gives the codes transmitted by each emulator. The default terminal emulation is ANSI.

*Note After you've started PROCOMM PLUS, you can switch the current terminal emulation by selecting Emulations from the Menu line.*

**Duplex.** Specifies the Duplex mode that will be in effect when you start PROCOMM PLUS.

| | |
|---|---|
| FULL | PROCOMM PLUS will not echo (or repeat) characters you type. |
| HALF | PROCOMM PLUS will echo characters you type. |

*Note After you've started PROCOMM PLUS, you can switch the Duplex mode using the* [Alt]-[E] *command.*

**Software flow control (XON/XOFF).** Specifies how PROCOMM PLUS manages flow control (sometimes called "handshaking") at the software level. Flow control paces the transfer of data between two computers to prevent characters being lost. As an example, if an older computer can't save data to disk as fast as a newer machine can send it, the receiving computer could use XON/XOFF flow control to pause the data long enough to save it to disk.

| | |
|---|---|
| OFF | PROCOMM PLUS does not use XON/XOFF flow control. |
| ON | PROCOMM PLUS uses XON/XOFF flow control. |

**Hardware flow control (RTS/CTS).** Specifies how PROCOMM PLUS manages flow control at the hardware level (using the RTS and CTS lines of the RS-232 serial interface). You should leave this set at OFF unless your modem or computer requires it.

| | |
|---|---|
| OFF | PROCOMM PLUS does not use RTS/CTS flow control. |
| ON | PROCOMM PLUS uses RTS/CTS flow control. This setting is sometimes useful if you're using a high-speed modem at 9600, 19200 or 38400 baud. |

*Note It's important to remember that flow control is different from a file transfer protocol. The two methods of flow control—XON/XOFF and RTS/CTS—will not detect or correct errors like YMODEM, a file transfer protocol. Instead, they stop and start the flow of data to regulate it.*

**Line wrap.** Determines what happens when the other computer sends a line that's longer than the column width of your screen.

| | |
|---|---|
| ON | PROCOMM PLUS will display the excess characters on the next line. |
| OFF | PROCOMM PLUS displays the excess characters at the end of the line, overwriting the last character. |

**Screen scroll.** Specifies what happens if the data sent by the other computer needs to start a new line and the cursor is in the last line of your screen.

| | |
|---|---|
| ON | PROCOMM PLUS shifts the data on the screen up one line, and the new line appears at the bottom of the screen. |
| OFF | PROCOMM PLUS moves the cursor to the left end of the last line and the new line replaces the characters there. |

**CR translation.** Controls whether or not PROCOMM PLUS will add a line feed to each carriage return received from the remote computer in Terminal mode.

| | |
|---|---|
| CR | PROCOMM PLUS will not add line feeds to carriage returns in incoming characters. |
| CR/LF | PROCOMM PLUS will add a line feed to every carriage return in characters received from the remote computer. |

*Note This affects only carriage returns received in Terminal mode—carriage returns received in ASCII file transfers are translated according to other Setup parameters (see "ASCII Transfer Options").*

**BS translation.** Determines what happens when your computer receives a Backspace character from the remote computer.

| | |
|---|---|
| DESTRUCTIVE | Receiving a Backspace character moves the cursor to the left and deletes the character there. |
| NON-DESTRUCTIVE | Receiving a Backspace character moves the cursor to the left but does not delete the character there. |

**Break length.** Specifies the length of the "break" time delay sent by PROCOMM PLUS when you press Alt-B in Terminal mode (or use the BREAK command in an ASPECT script). The default break length is 350 milliseconds. For more information, see "Break Key" in Chapter 7.

**Enquiry (ENQ).** Specifies how PROCOMM PLUS will respond if the other computer sends an ENQ control character (^E).

| | |
|---|---|
| OFF | PROCOMM PLUS will treat the ENQ control character as it does any other character. |
| ON | PROCOMM PLUS will respond by sending to the other computer the character string assigned to the Alt-0 Meta key (see "Meta keys" in Chapter 7). This is often called an "answer back" message. |
| CIS B | PROCOMM PLUS will respond to the ENQ control character by beginning a COMPUSERVE B file transfer. Use this option only for file transfers with CompuServe. |

*Note If you set ENQ to* CIS B, *you won't have to press* [PgDn] *or* [PgUp] *to start a file transfer when downloading from CompuServe with the* COMPUSERVE B *protocol. With ENQ set to* CIS B, *however, CompuServe will normally initiate a file transfer as soon as you log on. To avoid this, log on to CompuServe (before you set ENQ to* CIS B*), type* GO TERMINAL *at the CompuServe prompt, select "Terminal type/parameters" and set "Micro inquiry sequence at logon" to* NO. *You can then set ENQ in* PROCOMM PLUS *to* CIS B.

**EGA/VGA true underline.** Controls whether PROCOMM PLUS will display the "true" underlined characters used by several emulations. In ANSI emulation, underlining is normally represented by a blue foreground/black background attribute combination. Other terminal emulations that support underlined characters can also display true underlining—simply set the underline color attributes to a blue foreground on a black background.

| | |
|---|---|
| OFF | PROCOMM PLUS will display the colors or format you've selected under TERMINAL COLOR OPTIONS; if you're using ANSI, blue-on-black will not be underlined. |
| ON | PROCOMM PLUS will display true underlined characters when it receives the blue-on-black attribute combination. |

*Note True underlining is only supported for EGA and VGA systems. Monochrome monitors will not be affected by this parameter.*

**Terminal width.** Specifies whether PROCOMM PLUS will use an 80 or 132-column terminal emulation in Terminal mode.

| | |
|---|---|
| 80 | PROCOMM PLUS will emulate an 80 column terminal on the Terminal mode screen. |
| 132 | PROCOMM PLUS will allow 132 columns on screen. If your PC's hardware can display 132 columns (VGA and some EGA systems), selecting this value *in conjunction* with the correct video mode enables 132-column operation. For all other systems, this setting enables scrolling 132-column emulation. For more information on video modes, see "Display/Sound Options" later in this chapter. |

If your graphics adaptor and monitor will not display 132 columns on a single screen, PROCOMM PLUS supports 132-column "scrolling" emulation if you set this field to 132. In effect, PROCOMM PLUS shifts the entire screen to "follow" the cursor position. When you're using scrolling emulation, you'll note an arrow character in the right or left corner of the Status line; this arrow indicates that the screen will shift in that direction if the cursor is placed in the other portion of the logical 132-column screen. You may also view the other portion of the screen (**without** moving the cursor from its current position) by pressing [Ctrl]-[←] or [Ctrl]-[→]; note that you can only display the other screen portion (since the cursor remains at the current position). Scrolling is supported within the WYSE, ANSI and DEC VT-series emulations.

**ANSI 7 or 8 bit commands.** Specifies whether PROCOMM PLUS will accept 7 or 8 bit escape sequences within certain emulations.

| | |
|---|---|
| 7 BIT | PROCOMM PLUS will recognize 7 bit ANSI escape sequences. |
| 8 BIT | PROCOMM PLUS will recognize 7 and 8 bit ANSI escape sequences. |

ANSI 8 bit escape sequences are normally found on advanced VT-series terminals. This parameter affects only received characters.

## Display/Sound Options

When you select DISPLAY/SOUND OPTIONS from the Setup Main Menu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                          DISPLAY/SOUND OPTIONS

A- Exploding windows ... ON                  K- User video mode ..... 3

B- Sound effects ....... ON

C- Alarm sound ......... ON

D- Alarm time .......... 5  seconds

E- Snow removal ........ OFF

F- Status line ......... ON

G- Cursor type ......... LINE

H- Redisplay buffer .... 20 K

I- Video startup mode .. DOS MODE

J- VGA extra line count 50

Alt-Z: Help   Press the letter of the option to change:   Esc: Exit
```

**Exploding windows.** Specifies how PROCOMM PLUS opens windows containing various screens and menus.

| | |
|---|---|
| ON | PROCOMM PLUS opens windows by "exploding" them from the center outward. |
| OFF | PROCOMM PLUS windows appear instantly. |

**Sound effects.** Specifies whether PROCOMM PLUS will generate sounds when it opens or closes windows.

| | |
|---|---|
| ON | PROCOMM PLUS will generate sounds when it opens or closes windows. |
| OFF | PROCOMM PLUS will not generate sounds. |

*Note You can run PROCOMM PLUS without sound effects—even if YES is selected here—by starting PROCOMM PLUS with the /S switch. For more information, see "Other Ways of Starting PROCOMM PLUS" in Chapter 1.*

**Alarm sound.** Specifies whether or not PROCOMM PLUS will use your computer's speaker to signal the end of file transfers, connects during redials, and other events.

| | |
|---|---|
| ON | PROCOMM PLUS will signal the end of these events. |
| OFF | PROCOMM PLUS will not signal the end of these events. |

**Alarm time.** Specifies how long PROCOMM PLUS will sound an alarm to signal the end of file transfers, connects during redials, and other events. The default alarm time is 5 seconds.

*Note When an alarm is sounding, you can turn it off by pressing any key.*

**Snow removal.** Specifies whether PROCOMM PLUS will eliminate "snow" (flickering) on the screen.

| | |
|---|---|
| OFF | PROCOMM PLUS will not eliminate snow. |
| ON | PROCOMM PLUS will eliminate snow—select this if you see snow on your screen. |

**Status line.** Controls whether PROCOMM PLUS will display the Status line during Terminal mode operations.

| | |
|---|---|
| OFF | PROCOMM PLUS will not display the Status line. |
| ON | PROCOMM PLUS will display the Status line in Terminal mode. |

**Cursor type.** Determines the character used as a cursor in Terminal mode.

| | |
|---|---|
| BLOCK | PROCOMM PLUS displays a large square cursor. |
| LINE | PROCOMM PLUS displays an underline character as the cursor. |

**Redisplay buffer.** Specifies the size of the Terminal mode Redisplay buffer. The default size is 20 K, or approximately 20,000 characters, while the maximum size is 63 K.

*Note PROCOMM PLUS reserves the amount of memory you specify for the Redisplay buffer when you start the program. If conserving memory is important, consider lowering this value.*

**Video startup mode.** Determines the initial video mode used when you first start PROCOMM PLUS.

| | |
|---|---|
| DOS MODE | PROCOMM PLUS uses the same mode as DOS was using at startup. This mode is supported by all hardware. |
| 25 X 80 | The standard 25 row by 80 column display. This mode is supported by all hardware. |
| EXTRA X 80 | The screen displays 43 lines (for EGA systems) or the number of VGA extra lines (specified in the Setup) by 80 columns. **This mode is only supported by EGA and VGA adaptors and monitors.** |
| USER MODE | This mode works in conjunction with the User Video Mode value (see below) to place PROCOMM PLUS in any video mode your graphics adaptor and monitor can display. PROCOMM PLUS calls the video BIOS and requests a switch to the new value. **This mode is only supported by VGA adaptors and monitors (some "super EGA" adaptors can also support USER MODE).** |
| EXTRA X USER | PROCOMM PLUS displays the number of VGA extra lines you specified in Setup by the number of columns corresponding to your User Video Mode value. **This mode is only supported by VGA adaptors and monitors (some "super EGA" adaptors can also support EXTRA X USER).** |

*Note If you toggle your video mode to another value with the* Ctrl-- *Terminal command, you may not be able to return to the DOS video mode after you exit PROCOMM PLUS.*

*Note To use any of the 132-column video modes, you must also set the TERMINAL OPTION Terminal Width parameter to 132. Failure to do this will display 80 columns of data on a 132-column screen.*

**VGA extra line count.** Determines the number of extra lines displayed in Terminal mode on a VGA system.

| | |
|---|---|
| 28 | 28 lines are displayed. |
| 43 | 43 lines are displayed. |
| 50 | 50 lines are displayed. |

**User video mode.** Determines the value PROCOMM PLUS sends to the video BIOS of VGA graphic adaptors to switch to USER video mode. This value can range from 0 to 127, and is normally determined by the PCINSTAL program during installation. A value of 0 disables this option, while any other value is used as-is.

*Note If you switch graphic adaptors or monitors after installing PROCOMM PLUS, make sure that you use PCINSTAL to determine the correct new value for User Video Mode.*

**IMPORTANT: Since this value is sent directly to your hardware, an incorrect value could lock up your PC, fill the screen with garbage or blank the screen entirely. It's recommended that you do not enter a value manually; instead, allow PCINSTAL to determine the value for you!**

## General Options

When you select GENERAL OPTIONS from the Setup Main Menu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                GENERAL OPTIONS

A- Print device ........ PRN          K- Pulldown menu key ... [ ]
B- CD high at exit ..... YES          L- Drop DTR to hangup .. YES
C- Enhanced kb speedup . ON           M- File transfer key ... REC
D- Remote commands ..... OFF          N- Chat mode ........... BLOCK
E- Translation table ... OFF          O- Mouse X sensitivity . 00
F- Pause character ..... [ ]          P- Mouse Y sensitivity . 23
G- Transmit pacing ..... 1 milliseconds  Q- Clipboard separator . 13
H- Call logging ........ ON
I- Filename lookup ..... ON
J- Pulldown menus ...... ON

Alt-Z: Help | Esc: Exit | Press the letter of the option to change:
```

**Print device.** Specifies the DOS device PROCOMM PLUS will use for all print operations. Normally, this device is PRN. Note that no ending colon (:) is required when entering a device name.

**CD high at exit.** Determines the action PROCOMM PLUS will take if Carrier Detect is high when you exit the program.

| | |
|---|---|
| IGNORE | PROCOMM PLUS ends without hanging up the connection or prompting. This is useful for those who must exit PROCOMM PLUS without terminating a call, or for those who must force CD high. |
| ASK | PROCOMM PLUS will display a prompt asking whether or not to hang up the connection. |
| HANGUP | PROCOMM PLUS hangs up the phone without prompting. |

**Enhanced kb speedup.** Controls whether PROCOMM PLUS will speed up keyboard and cursor movement if you're using an enhanced keyboard. This decreases the delay between the moment a key is pressed and when it is acted upon, and it speeds up the rate at which a character is repeated if you hold down a key. Keyboard speedup has no effect if you're not using an enhanced keyboard.

| | |
|---|---|
| OFF | PROCOMM PLUS will not speed up cursor movement with enhanced keyboards. |
| ON | PROCOMM PLUS will speed up cursor movement with enhanced keyboards. |

**Remote commands.** Specifies whether PROCOMM PLUS will accept script commands sent by a remote system.

| | |
|---|---|
| OFF | PROCOMM PLUS will not accept script commands from a remote system. |
| ON | PROCOMM PLUS will accept script commands from a remote system. |

For more information, see "Remote Commands" in Chapter 2 of your ASPECT SCRIPT LANGUAGE REFERENCE MANUAL.

**Translation table.** Specifies whether or not PROCOMM PLUS will use the translation table to translate or filter characters being received from the other computer. You can modify the translation table using the [Alt]-[W] command (see "Changing the Translation Table" later in this chapter).

| | |
|---|---|
| OFF | PROCOMM PLUS will not translate incoming characters. |
| ON | PROCOMM PLUS will translate incoming characters using the translate table. |
| STRIP | PROCOMM PLUS will remove the high bit of **every** incoming character. |

**Pause character.** Specifies the character that PROCOMM PLUS will translate into a half-second pause when it appears in a character string (such as the modem hang-up command or the Host-mode welcome message). The default character is a tilde (~); you can specify any letter or number key instead. For more information, see "Translating Control Codes" in the appendix titled "Technical Information".

**Transmit pacing.** Specifies the delay (in milliseconds) between sending each character in a string (this includes modem commands, Meta keys and terminal-control sequences like function keys and cursor controls). The default transmit pacing is 0 milliseconds, or no delay.

***Note*** *If your modem or a remote computer can't process characters as fast as your computer can send them, increase the transmit pacing.*

**Call logging.** Specifies whether PROCOMM PLUS will keep a log of all completed calls.

| | |
|---|---|
| ON | PROCOMM PLUS will log all completed calls in the file PCPLUS.FON. Each entry in this file shows the name and number of the computer you've called, and the date, time and duration of the call. |
| OFF | PROCOMM PLUS will not log calls. If you don't want to keep a record of your calls, select this to prevent PCPLUS.FON from being continually written to disk. |

**Filename lookup.** Specifies whether PROCOMM PLUS will look for a filename on the screen when you press [PgDn] or [PgUp] (if you've selected the XMODEM, 1K-XMODEM, ASCII, RASCII, WXMODEM, IMODEM or 1K-XMODEM-G protocols). For more information, see "Receive Files" and "Send Files" in chapter 7.

| | |
|---|---|
| ON | PROCOMM PLUS will look for a filename on the screen when you press [PgDn] or [PgUp] to receive or send a file. |
| OFF | PROCOMM PLUS will not look for a filename on the screen when you press [PgDn] or [PgUp]. |

**Pulldown Menu line.** Specifies whether PROCOMM PLUS will display the Pulldown Menu line when you press the key specified next to "Pulldown menu key". For more information about using the Menu line, see "Giving PROCOMM PLUS Commands" in Chapter 1.

| | |
|---|---|
| YES | PROCOMM PLUS will display the Menu line. |
| NO | PROCOMM PLUS will not display the Menu line. |

**Menu line key.** Specifies the key that will activate the Menu line. You can use any alphanumeric or symbol key. The default key is [`] (the key that has the tilde [~] above it).

**Drop DTR to hangup.** Specifies whether you want PROCOMM PLUS to drop the DTR line (which hangs up most modems). Dropping DTR is usually much faster than sending the Hangup string.

| | |
|---|---|
| YES | PROCOMM PLUS will hang up by dropping the DTR line. |
| NO | PROCOMM PLUS will hang up by sending the modem hangup command; it will not drop the DTR line. |

**File transfer key.** Specifies whether PROCOMM PLUS recognizes the regular or alternate keys when sending or receiving files.

| | |
|---|---|
| REG | PROCOMM PLUS will use the [PgUp] and [PgDn] keys to initiate file transfers. |
| CTRL | PROCOMM PLUS will use the [Ctrl]-[PgUp] and [Ctrl]-[PgDn] keys to initiate file transfers. |

*Note If the [PgUp] and [PgDn] keys conflict with a terminal emulation or memory-resident program, use the [Ctrl]-[PgUp] and [Ctrl]-[PgDn] alternate keys.*

**Chat mode.** Determines whether PROCOMM PLUS will send each character immediately in Terminal Chat mode.

| | |
|---|---|
| BLOCK | PROCOMM PLUS will wait for a carriage return before sending text to the remote system. |
| CHAR | PROCOMM PLUS will send each character you type immediately to the remote system. |

*Note This field doesn't affect the Host mode Chat function, which is always character-based.*

**Mouse X sensitivity.** Specifies the sensitivity of the mouse's horizontal movement (left-to-right). The lower the number, the higher the effective sensitivity. The default sensitivity is 30, which should accomodate most mice.

**Mouse Y sensitivity.** Specifies the sensitivity of the mouse's vertical movement (up-and-down). The lower the number, the higher the effective sensitivity. The default sensitivity is 28, which should accomodate most mice.

**Clipboard separator.** Determines the separator character PROCOMM PLUS sends between each filename when you use the Paste All and Tag Paste Clipboard commands. The character value is in decimal format, and can range from 1 to 127. The default value is a carriage return (decimal 13).

*Note For host systems that expect multiple filenames to be entered on a single line (like RBBS and TBBS bulletin boards), use a space (decimal 32) as your separator.*

## Host Mode Options

When you select HOST MODE OPTIONS from the Setup Main Menu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                HOST MODE OPTIONS

A- Welcome message ... Welcome to PROCOMM PLUS Host!
B- System type ....... OPEN
C- Auto baud detect .. ON
D- Connection type ... MODEM
E- Host timeout ...... 5 (minutes)
F- Goodbye action ... RECYCLE
G- New user level ... 1
H- Upload directory .
I- Download directory
J- Use SHELLBOOT .... NO

Alt-Z: Help  Press the letter of the option to change:  Esc: Exit
```

**Welcome message.** Specifies the message that PROCOMM PLUS Host sends to the other computer when it connects. The maximum length of this field is 50 characters.

*Note Some modems report a connection (by raising CD) before the connection is stable. If remote users don't always see your Welcome message, prefix it with one or two pause characters.*

**System type.** Specifies whether new users can access your system.

| | |
|---|---|
| OPEN | Allows new users to access your system. |
| CLOSED | Allows only authorized users already entered in PCPLUS.USR to access your system. |

**Auto baud detect.** Specifies whether PROCOMM PLUS will automatically change its baud rate to that used by the other system.

| | |
|---|---|
| ON | The remote user can call your system at any baud rate allowed by your modem, and PROCOMM PLUS will switch to the same baud rate. |
| OFF | PROCOMM PLUS will not automatically adjust its baud rate if the connection is made at a different baud rate. |

**Connection type.** Specifies whether the remote system is connected to your system by a modem or by a direct connection.

| | |
|---|---|
| MODEM | The remote system is connected to yours via a modem and telephone line. |
| DIRECT | The remote system is connected via a "null modem cable" (for information about making a null modem cable, see the appendix "Making a Null Modem Cable"). |

**Host timeout.** Determines the amount of time PROCOMM PLUS Host will wait for user input before disconnecting. The default is 5 minutes. A message will be displayed for the last 10 seconds of this period, warning the user that Host will disconnect unless a key is pressed. Set this option to 0 to disable the timeout function.

To PROCOMM PLUS Host, both an inactivity timeout and a loss of carrier are identical to the Goodbye command; therefore, the value you choose for the *Goodbye Action* option will also determine if any external processing is performed for a timeout or carrier loss.

**Goodbye action.** Determines what action your Host system will take when a user selects the Goodbye command, carrier is lost or a Host timeout occurs.

| | |
|---|---|
| RECYCLE | Host will disconnect the user and recycle normally for the next call. |
| HANGUP | Host will act as if [Esc] had been pressed; the user is disconnected, and control is returned to Terminal mode (or back to the script that invoked Host). |
| EXIT | Host passes control back to Terminal mode (or the script that invoked Host) *without dropping carrier*. This powerful feature allows you to add external ASPECT functions to your Host system (examples might be automated PCMAIL compression, file manipulation or even "door" games written in ASPECT). If the script reloads Host after external processing, the user must log on again. The online time information and goodbye message will not be displayed if you select EXIT. |

**IMPORTANT: If you use EXIT, you should either use the ASPECT HANGUP command to drop carrier after the external program runs or reload Host to allow the user back on to the system. PROCOMM PLUS will not monitor or drop carrier with EXIT enabled, so your script should be written with security in mind!**

**New user level.** Determines what security level will be assigned to new users calling for the first time.

| | |
|---|---|
| 1 | A new user with an access level of 1 may transfer files normally. |
| 0 | A new user with an access level of 0 would not be able to upload or download files. |

*Note For more information on these security levels, see Chapter 9.*

**Upload directory.** Specifies the path that PROCOMM PLUS will use for saving files you receive from the user. A backslash (\) is automatically added to the path you enter (you'll see it the next time you use the Setup facility).

*Note By specifying an Upload directory that's not the same as either the Download directory or the current directory, you can review files received from remote systems before making them available for downloading. This also helps to make your system secure.*

**Download directory.** Specifies the path that PROCOMM PLUS will let remote systems access when downloading files from your computer. PROCOMM PLUS will add a backslash (\) to the path you enter (you'll see the backslash the next time you use the Setup facility).

*Note By specifying a Download directory that's not the same as either the Upload directory or the current directory, you can make sure that remote users will be not be able to review files stored in any other directory. This also helps to make your system secure.*

**Use SHELLBOOT.** Specifies whether or not Host will automatically reboot your PC if carrier drops while a remote user has Shelled to DOS.

| | |
|---|---|
| NO | Host will not reboot your computer if carrier is lost. |
| YES | Host automatically reboots your PC if carrier is lost. |

For more information about using PROCOMM PLUS' Host mode, see Chapter 9, "Using Host Mode".

*Note If you specify YES for this option and you wish Host to reload after a reboot, your AUTOEXEC.BAT file must reload the program.*

## File/Path Options

When you select FILE/PATH OPTIONS from the Setup Main Menu, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                  FILE/PATH OPTIONS

A- Default filename for log files (Alt-F1)
   PCPLUS.LOG
B- Default filename for screen snapshot files (Alt-G)
   PCPLUS.SCR
C- Default path for downloaded files (PgDn)

D- Program name for editor hot key (Alt-A)
   PCEDIT /N
E- Program name for view utility hot key (Alt-V)

Alt-Z: Help   Press the letter of the option to change:   Esc: Exit
```

**Default filename for log files.** Specifies the filename PROCOMM PLUS will use for logging when you press [Alt]-[F1]. The filename you specify here will be the one PROCOMM PLUS will use unless, when you select that command, you enter a different filename before pressing [Enter]. The default filename is PCPLUS.LOG. For more information about the [Alt]-[F1] command, see "Log File On/Off" in Chapter 7.

**Default filename for screen snapshot files.** Specifies the filename PROCOMM PLUS will use for saving the contents of the screen when you press [Alt]-[G]. The default filename is PCPLUS.SCR. For more information about the [Alt]-[G] command, see "Screen Snapshot" in Chapter 7. To dump the screen to a DOS device, specify the device name (without a colon).

**Default path for downloaded files.** Specifies the path (the disk drive and/or directory) that PROCOMM PLUS will use for saving files you receive from a remote computer when you press [PgDn]. PROCOMM PLUS will use the path you specify here unless, when you select that command, you enter a different path before entering the filename. PROCOMM PLUS will add a backslash (\) to the path you enter; you'll see it the next time you use the Setup facility. For more information about the [PgDn] command, see "Receive Files" in Chapter 7.

**Program name for editor hot key.** Specifies the command that starts the editor or word processor you want PROCOMM PLUS to access when you press Alt-A. For more information about this command, see "Editor" in Chapter 7. If you don't specify an alternate program, PROCOMM PLUS uses its own editor, PCEDIT. If you want to specify some other editor or word processor, you can specify the complete path to the program (that is, the disk drive and directory where it is stored) as well as the command that starts the program. The command that starts the program can be any filename with the *.COM* or *.EXE* extension.

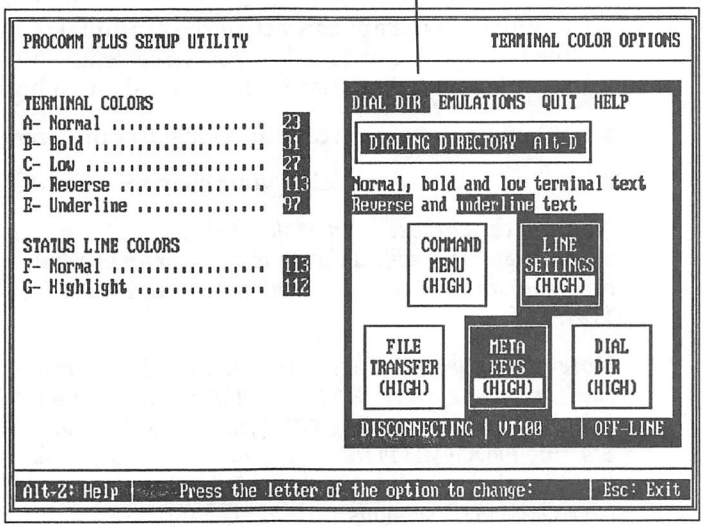
**Program name for view utility hot key.** Specifies the command that starts the view utility you want PROCOMM PLUS to access when you press Alt-V. You can specify the complete path to the program (the disk drive and directory where it is stored) as well as the command that starts the program. The command that starts the program can be any filename with the .COM or .EXE extension.

If you don't specify a view utility here, PROCOMM PLUS uses its own built-in view utility. For more information about the Alt-V command, see "View a File" in Chapter 7.

## Terminal Color Options

When you select COLOR OPTIONS from the Setup Main Menu and then TERMINAL COLORS from the Setup Terminal Options Menu, PROCOMM PLUS displays this screen:

These sample windows show how text with the various attributes will appear.




The first five parameters on this screen control the colors that PROCOMM PLUS will use for displaying characters in Terminal mode, while the last two parameters control the appearance of the Status line. For each attribute, you can choose from 128 combinations of a foreground color (the color used for a character) and a background color (the color used for the area behind the character). Note that the background color specified for the Normal attribute determines the background of the entire screen (except for the areas where text with other attributes appears).

The particular attribute that is used for displaying text is determined by either PROCOMM PLUS or—if you're connected to another computer—the terminal that's being emulated. For example, PROCOMM PLUS uses the Normal attribute for text you type when you're not connected to another computer, and it uses the High intensity and Reverse video attributes for various screens in the Setup facility. When you're connected to another computer, certain terminal emulations use various attributes for displaying various parts of screens.

- Press the letter key corresponding to the attribute you want to change.

  Setup displays a window containing all the possible color combination for the attribute.

- Use the four cursor keys to move the highlight box to the color combination you want to use for the selected attribute.

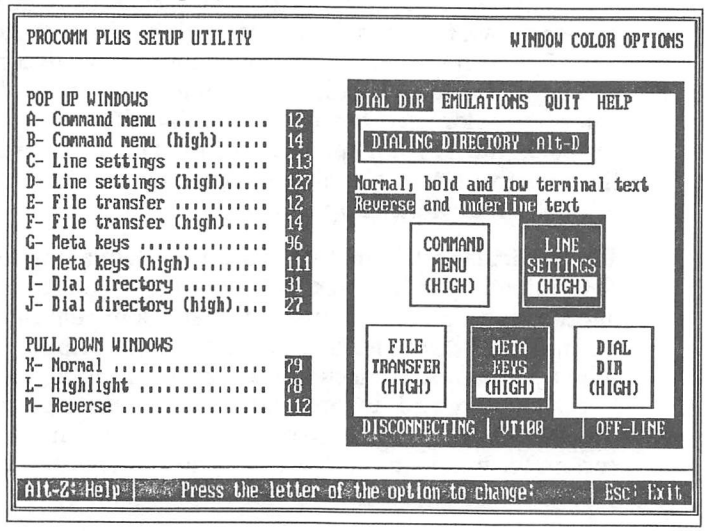
  Setup updates the sample display in the right half of the screen to illustrate the appearance of the Terminal mode screen with the new color combination you've selected. Note that each sample screen item has both a normal and a highlighted value.

- When you're satisfied with your selection, press [Enter].
- When you've completed your changes, press [Esc].

***Note*** *If certain text is invisible after you've changed colors, check whether you've specified the same color for an attribute's foreground and background (these are color combinations 0, 17, 34, 51, 68, 85, 102 and 119).*

***Note*** *If you want to change the colors of* the Terminal mode *window to black and white, start* PROCOMM PLUS *using the /b switch. For more information about starting* PROCOMM PLUS *this way, see "Other Ways of Starting* PROCOMM PLUS*" in Chapter 1. Be sure to save your changes so that the window will be displayed in black and white for all future* PROCOMM PLUS *sessions.*

When you select COLOR OPTIONS from the Setup Main Menu and then WINDOW COLORS from the Setup Terminal Options Menu, PROCOMM PLUS displays this screen:



This screen is similar to the Terminal Colors screen; however, it controls the normal and highlighted attribute values for the various windows displayed by PROCOMM PLUS. For each attribute, you can choose from 128 combinations of a foreground color (the color used for a character) and a background color (the color used for the area behind the character).

- Press the letter key corresponding to the attribute you want to change.

  Setup displays a window containing all the possible color combinations for the attribute.

- Use the four cursor keys to move the highlight box to the color combination you want to use for the selected attribute.

  Setup updates the sample display in the right half of the screen to illustrate the appearance of the windows with the new color combination you've selected. Note that each sample window has both a normal and a highlighted value.

- When you're satisfied with your selection, press [Enter].
- When you've completed your changes, press [Esc].

*Note If certain text or borders are invisible after you've changed colors, check whether you've specified the same color for an attribute's foreground and background (these are color combinations 0, 17, 34, 51, 68, 85, 102 and 119).*

*Note If you want to change the colors of* all *windows to black and white, start PROCOMM PLUS using the /b switch. For more information about starting PROCOMM PLUS this way, see "Other Ways of Starting PROCOMM PLUS" in Chapter 1, "Getting Started". Be sure to save your changes so that the windows will be displayed in black and white for all future PROCOMM PLUS sessions.*

## General Protocol Options

When you select PROTOCOL OPTIONS from the Setup Main Menu and then GENERAL OPTIONS, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                    GENERAL PROTOCOL OPTIONS

A- Protocol timing ............... NORMAL

B- Aborted downloads ............ KEEP

C- Abort xfer if CD lost ........ YES

Alt-Z: Help  Press the letter of the option to change:  Esc: Exit
```

**Protocol timing.** Specifies the timing for file transfers using the XMODEM family of protocols.

| | |
|---|---|
| NORMAL | For systems that work well with the normal XMODEM timing. |
| RELAXED | For transferring files with systems—such as CompuServe—that do not work well with the normal XMODEM timing. You can recognize such systems if you transfer files to or from them using the normal XMODEM timing—there will be an abnormal number of file-transfer aborts or bad blocks. |

*Note* *YMODEM, YMODEM-G, 1K-XMODEM and 1K-XMODEM-G also support relaxed mode.*

**Aborted downloads.** Specifies what happens to files being downloaded if the file transfer is aborted.

| | |
|---|---|
| KEEP | PROCOMM PLUS keeps the partial files. |
| DELETE | PROCOMM PLUS discards the partial files. |

*Note* *CIS B and ZMODEM never delete partial files (regardless of the value for this option).*

**Abort xfer if CD lost.** Determines whether or not PROCOMM PLUS will abort a transfer if carrier is lost.

| | |
|---|---|
| YES | PROCOMM PLUS aborts a file transfer if Carrier Detect drops. |
| NO | PROCOMM PLUS doesn't abort a file transfer if carrier is lost. |

*Note If you're transferring files between two computers connected to each other with a null modem cable and the transfers continue to abort, try setting this field to NO.*

## ASCII Transfer Options

When you select PROTOCOL OPTIONS from the Setup Main Menu and then ASCII TRANSFER OPTIONS, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                  ASCII TRANSFER OPTIONS

A- Echo locally ................ NO     K- CR translation (download).. NONE
B- Expand blank lines .......... YES    L- LF translation (download).. NONE
C- Expand tabs ................. YES
D- Character pacing (millisec).. 5
E- Line pacing (1/10 sec)....... 5
F- Pace character .............. 0
G- Strip 8th bit ............... NO
H- ASCII download timeout ...... 10 seconds
I- CR translation (upload) ..... NONE
J- LF translation (upload) ..... STRIP

Alt-Z: Help   Press the letter of the option to change:   Esc: Exit
```

These parameters control how data is transmitted or received if you're using the ASCII file transfer protocol.

*Note Although RASCII is similar to ASCII, it doesn't support all of the fields on this screen. For information on which items apply to RASCII, see the definition for RASCII in the appendix titled "File Transfer Protocols".*

**Echo locally.** Specifies whether PROCOMM PLUS will display on your screen data that's being sent to the other computer.

| | |
|---|---|
| NO | PROCOMM PLUS will not display the data. |
| YES | PROCOMM PLUS will display the data. |

*Note You don't normally need to have PROCOMM PLUS echo data you send, since the computer you're connected to will echo the data on your display. If you don't see the data you're sending, set this to YES. If you set this to YES and the other computer is echoing also, the data may appear doubled (lliikkee tthhiis), because both computers are echoing the data.*

**Expand blank lines.** Specifies whether PROCOMM PLUS will replace blank lines (lines consisting only of a carriage return, or a carriage return and a line feed) with a space (lines consisting of a space character followed by a carriage return or by a carriage return and line feed). When you leave a message on certain remote systems, a blank line—which you might want in your message to separate paragraphs—is interpreted as the end of the message. Selecting YES lets you include a blank line in a message without the system treating it as the end of the message.

| | |
|---|---|
| YES | PROCOMM PLUS will add a space character on each blank line that is sent to the other computer. |
| NO | PROCOMM PLUS will not add a space character on each blank line. |

**Expand Tabs.** Specifies whether PROCOMM PLUS will replace tab characters with eight spaces.

| | |
|---|---|
| YES | PROCOMM PLUS will replace each tab character in data sent to the other computer with enough spaces to pad the data to the next tab stop. Like DOS, tabs are spaced every 8 positions. |
| NO | PROCOMM PLUS will not replace each tab character with eight spaces. |

**Character pacing.** Specifies the delay (in milliseconds) between sending each character and sending the next character (to the other computer). This delay is necessary for many remote systems that cannot "read" characters received immediately after each other. The default character pacing is 5 milliseconds.

**Line pacing.** Specifies the delay (in tenths of a second) between sending each line of data and sending the next line (to the other computer). The default line pacing is 5 tenths of a second (1/2 second).

Line pacing, like character pacing, may be necessary for certain remote systems. Generally, you do not need to specify line pacing if you've specified character pacing.

**Pace character.** Used to ensure that the remote computer has received each line of data before the next line is sent.

If you specify a pace character, PROCOMM PLUS waits to receive that character from the remote computer before sending the next line. You specify a pace character using its ASCII (numeric) value; for a table of ASCII character values, see "ASCII Table" in appendix D, "Technical Information." To specify no pace character (so that PROCOMM PLUS will not wait between sending lines), use the ASCII value 0 (which is the default).

**Strip 8th bit.** Specifies whether PROCOMM PLUS will strip the 8th bit in characters being sent or received during ASCII file transfers.

| | |
|---|---|
| YES | PROCOMM PLUS will strip the 8th bit. |
| NO | PROCOMM PLUS will not strip the 8th bit. |

*Note If this has been set to YES and you transfer a WordStar file using the ASCII protocol, the file received will be in ASCII format rather than WordStar format.*

**ASCII download timeout.** Specifies the amount of seconds PROCOMM PLUS will wait between received characters during an ASCII download. If this number of seconds passes and the connection is idle (PROCOMM PLUS hasn't received any characters), the transfer will automatically end and the file will be saved to disk. The default value is 10 seconds, and the maximum value is 30000 seconds.

*Note This option is especially helpful if you're performing unattended downloads of ASCII files.*

**CR translation (upload).** Specifies how PROCOMM PLUS will process carriage return characters in files you send to the remote computer.

| | |
|---|---|
| NONE | PROCOMM PLUS will send carriage returns to the remote computer without translation (that is, without modifying them). |
| STRIP | PROCOMM PLUS will not send carriage returns in the data. |
| ADD LF | For every carriage return in the data, PROCOMM PLUS will send not only a carriage return, but also a line feed character. |

**LF translation (upload).** Specifies how PROCOMM PLUS will process line feed characters in files you send to the remote computer.

| | |
|---|---|
| STRIP | PROCOMM PLUS will not send line feeds in the data. |
| NONE | PROCOMM PLUS will send line feeds to the remote computer without translation (that is, without modifying them). |
| ADD CR | For every line feed in the data, PROCOMM PLUS will send a carriage return (CR) and then a line feed (LF). |

**CR translation (download).** Specifies how PROCOMM PLUS will process carriage return characters in files you receive from the remote computer.

| | |
|---|---|
| NONE | PROCOMM PLUS will not translate or remove carriage returns in the data received. |
| STRIP | PROCOMM PLUS will remove carriage returns from the data before storing it in a file. |
| ADD LF | Before storing data received from the remote computer in a file, PROCOMM PLUS will replace every carriage return in the data with a carriage return followed by a line feed. |

**LF translation (download).** Specifies how PROCOMM PLUS will process line feed characters in files you receive from the remote computer.

| | |
|---|---|
| NONE | PROCOMM PLUS will leave line feeds in the data received. |
| STRIP | PROCOMM PLUS will remove line feeds from the data before storing it in a file. |
| ADD CR | Before storing data received from the remote computer in a file, PROCOMM PLUS will replace every line feed in the data with a carriage return followed by a line feed. |

## Kermit Options

When you select PROTOCOL OPTIONS from the Setup Main Menu and then KERMIT OPTIONS, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                  KERMIT OPTIONS

A- Control quote character ... 35 (ASCII value)

B- Maximum packet size ....... 1024

C- Pad character ............ 0 (ASCII value)

D- Number of pad characters .. 0

E- 8th bit quote character ... 38 (ASCII value)

F- Handshake character ....... 0 (ASCII value)

G- End of line character ..... 13 (ASCII value)

H- File type ................ BINARY

I- Block check type ......... 1 BYTE CHECKSUM

J- Block start character ..... 1 (ASCII value)

Alt-Z: Help  Press the letter of the option to change:        Esc: Exit
```

Kermit is typically used for file transfers with mini- and mainframe systems, and there are many different revisions of Kermit for most computers. Therefore, to determine the values to use in this Setup screen, consult the system administrator for the system you'll be calling.

*Note If you're calling a PC or PC-based bulletin board, the default values should provide the fastest and most efficient transfers; we recommend that you do not change the Kermit protocol default values unless modification is absolutely required.*

## ZMODEM Options

When you select PROTOCOL OPTIONS from the Setup Main Menu and then ZMODEM OPTIONS, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                  ZMODEM OPTIONS

A- Error detection method ......  32-bit CRC

B- Time and date stamping ......  ON

C- Auto downloading ............  ON

D- Receiver crash recovery .....  ON

E- Sender crash recovery .......  ON

F- Transmit method .............  STREAMING

Alt-Z=Help   Press the letter of the option to change:        Esc: Exit
```

**Error detection method.** Specifies 16-bit or 32-bit CRC error detection. 32-bit CRC is better for users requiring absolute data integrity, and is the default; however, it takes slightly longer for PROCOMM PLUS to confirm the accuracy of the data.

| | |
|---|---|
| 32-BIT CRC | PROCOMM PLUS will use 32-bit CRC error detection. |
| 16-BIT CRC | PROCOMM PLUS will use 16-bit CRC error detection. |

**Time and date stamping.** Specifies whether PROCOMM PLUS will reset the time and date stamp on received files.

| | |
|---|---|
| OFF | PROCOMM PLUS will use your computer's current date and time as the creation date and time for each file sent. |
| ON | Received files will bear the original system time and date sent by the remote system. |

**Auto downloading.** Controls whether PROCOMM PLUS will allow *auto downloading* of ZMODEM files in Terminal mode. If auto downloading is enabled, PROCOMM PLUS will automatically begin a ZMODEM download when it receives the initial ZMODEM header block from the remote system.

| | |
|---|---|
| OFF | PROCOMM PLUS will not initiate a ZMODEM download automatically. ZMODEM downloads must be performed manually. |
| ON | PROCOMM PLUS will automatically begin a ZMODEM receive. The file is stored in the download directory entered in the Setup (or to the current directory if you haven't specified a download directory). |

*Note Auto downloading can be a great convenience if you use ZMODEM often; simply instruct the remote system to send the file with ZMODEM and relax while PROCOMM PLUS does the work for you!*

*Note Due to conflicts between certain key sequences and the characters that initiate auto downloads in ZMODEM, auto downloading isn't supported by the DG emulation family, the ADDS emulation family and WYSE 50 emulation.*

**Receiver crash recovery.** Specifies the action PROCOMM PLUS takes if a file download is interrupted and restarted (this is called "point-of-interrupt" operation). If you're receiving a file and the transfer is interrupted (for example, loss of carrier due to a power failure), simply reconnect to the remote and begin the ZMODEM transfer again. PROCOMM PLUS will either restart the transfer at the point where the connection was lost, protect the partial file from being overwritten or overwrite the partial file and start the transfer from the beginning again; the outcome is determined by the values set on *both* machines.

| | |
|---|---|
| ON | PROCOMM PLUS will perform point-of-interrupt if the remote computer's ZMODEM Sender crash recovery is set ON or NEGOTIATE. If the sending machine is set to OVERWRITE, the partial file already received is overwritten, and the transfer starts from the beginning. If the sending machine is set to PROTECT, the partial file is protected from being overwritten; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |

| | |
|---|---|
| **NEGOTIATE** | PROCOMM PLUS will use the remote computer's ZMODEM Sender crash recovery setting to determine the action taken. If the Sender has crash recovery set ON, point-of-interrupt operation begins. If the sending machine is also set to NEGOTIATE, the partial file is protected from overwrite; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). If the sending machine is set to OVERWRITE, the partial file already received is overwritten, and the transfer starts from the beginning. If the sending machine is set to PROTECT, the partial file is protected from overwrite; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |
| **OVERWRITE** | If the sending machine is set to ON, NEGOTIATE or OVERWRITE, PROCOMM PLUS will overwrite the partial file already received, and the transfer starts from the beginning. If the sending machine is set to PROTECT, the partial file is protected from overwrite; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |
| **PROTECT** | PROCOMM PLUS will protect the partial file from overwrite **no matter what crash recovery setting is used by the sending machine**; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |

**Sender crash recovery.** Specifies the action PROCOMM PLUS takes if a file upload is interrupted and restarted. If you're sending a file and the transfer is interrupted, you can reconnect to the remote and begin the ZMODEM transfer again. PROCOMM PLUS will either restart the transfer at the point where the connection was lost, protect the partial file from overwrite or overwrite the partial file and start the transfer from the beginning again; the outcome is determined by the values set on *both* machines.

| | |
|---|---|
| ON | PROCOMM PLUS will perform point-of-interrupt if the remote computer's ZMODEM Receive crash recovery is set ON or NEGOTIATE. If the receiving machine is set to OVERWRITE, the partial file already received is overwritten, and the transfer starts from the beginning. If the receiving machine is set to PROTECT, the partial file is protected from overwrite; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |
| NEGOTIATE | PROCOMM PLUS will use the remote computer's ZMODEM Receive crash recovery setting to determine the action taken. If the receiving machine has crash recovery set ON, point-of-interrupt operation begins. If the receiving machine is also set to NEGOTIATE, the partial file is protected from overwrite; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). If the receiving machine is set to OVERWRITE, the partial file already received is overwritten, and the transfer starts from the beginning. If the receiving machine is set to PROTECT, the partial file is protected from overwrite; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |
| OVERWRITE | If the receiving machine is set to ON, NEGOTIATE or OVERWRITE, PROCOMM PLUS will overwrite the partial file already received, and the transfer starts from the beginning. If the receiving machine is set to PROTECT, the partial file is protected from overwrite; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |

| | |
|---|---|
| PROTECT | PROCOMM PLUS will protect the partial file from overwrite **no matter what crash recovery setting is used by the receiving machine**; if there are other files to transfer, ZMODEM will send them (if not, the transfer ends **normally**). |

**Transmit method.** Determines the transmission method PROCOMM PLUS will use during ZMODEM file uploads. By default, ZMODEM is a "streaming" protocol - the sending computer continues to transmit data until either the end of the file is reached or the receiver requests the retransmission of data. This is a more efficient method of transferring a file, since the receiver need not acknowledge each block (as in XMODEM or YMODEM).

However, if you're transferring files over exceptionally noisy lines or across a packet-switched nework, ZMODEM can also be set to use a "windowing" transfer method. Window sizes of 2048 bytes (2K WINDOW) and 4096 bytes (4K WINDOW) are supported.

| | |
|---|---|
| STREAMING | PROCOMM PLUS will use the streaming transfer method during ZMODEM uploads. |
| 2KWINDOW | PROCOMM PLUS will use windows of 2048 bytes during ZMODEM uploads. |
| 4KWINDOW | PROCOMM PLUS will use windows of 4096 bytes during ZMODEM uploads. |

***Note*** *Since ZMODEM automatically switches to the sender's transmission method when receiving a file, this field only affects ZMODEM files sent from your PC to a remote computer.*

## External Protocol Options

When you select PROTOCOL OPTIONS from the Setup Main Menu and then EXTERNAL PROTOCOL OPTIONS, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                          EXTERNAL PROTOCOL OPTIONS

EXTERNAL PROTOCOL 1
A- Name ................  [EXT 1]
B- Type ................  PROGRAM
C- Upload command ......
D- Download command ....

EXTERNAL PROTOCOL 2
E- Name ................  [EXT 2]
F- Type ................  PROGRAM
G- Upload command ......
H- Download command ....

EXTERNAL PROTOCOL 3
I- Name ................  [EXT 3]
J- Type ................  PROGRAM
K- Upload command ......
L- Download command ....

Alt-Z: Help | Press the letter of the option to change: | Esc: Exit
```

**External protocol name.** Specifies the name for this external protocol. PROCOMM PLUS will display this name on the Protocol Selection window when you press [PgDn] or [PgUp] to receive or send a file. The name can be up to 8 characters in length.

**External protocol type.** Specifies the type for this external protocol. PROCOMM PLUS accepts 3 different external protocol types.

| | |
|---|---|
| PROGRAM | PROCOMM PLUS uses an external .COM or .EXE program, passing the Upload or Download command. |
| HOOK | PROCOMM PLUS passes file and session information directly to a specially-written protocol program. |
| ASPECT | PROCOMM PLUS executes a protocol script written in the ASPECT script language. |

**External protocol upload command.** Specifies the protocol command you want to use when you select protocol number 1 for uploading.

**External protocol download filename.** Specifies the command you want to use when you select protocol number 1 for downloading.

External protocols 2 and 3 are exactly like protocol 1, so the above information will apply to them too.

For more information about external protocol types and their uses, see "External 1, 2, 3" in Appendix B.

## PCEDIT Options

When you select EDITOR OPTIONS from the Setup Main Menu and then GENERAL OPTIONS, PROCOMM PLUS displays this screen:

```
PROCOMM PLUS SETUP UTILITY                                  PCEDIT OPTIONS

A- Editor input mode ............ ASPECT
B- Expand tabs ................... NO
C- Tab stop spacing .............. 8
D- Omit EOF mark ................. NO
E- Indentation (ASPECT mode) ...  3
F- Indentation (WP mode) ........ 5
G- Use wordwrap (WP mode) ...... YES
H- Right justify (WP mode) ..... NO
I- Left margin (WP mode) ........ 1
J- Right margin (WP mode) ...... 78

Alt-Z: Help   Press the letter of the option to change:   Esc: Exit
```

**Editor input mode.** Specifies which cursor movement mode PCEDIT will use when you add new lines or press [Enter].

| | |
|---|---|
| ASPECT | If the next line is not blank, the cursor moves to the first character on the next line. If the next line is blank, the cursor moves to the indent level corresponding to the contents of the previous non-blank line. |
| WP | If the next line is not blank, the cursor moves to the first character. If the next line is blank, the cursor is adjusted to the left-margin value on the next line. |

**Expand tabs.** Determines whether PCEDIT will replace tab characters with spaces.

| | |
|---|---|
| NO | Tab characters appear as ASCII control characters and are not expanded to spaces. |
| YES | PCEDIT will convert all tab characters to spaces (using a default tab stop of 8 characters). |

*Note If a program doesn't accept tabs within its data files, this setting should be used to substitute spaces.*

**Tab stop spacing.** Determines the tab stop spacing. The default is 8 characters, with a minimum of 0 and a maximum of 119.

**Omit EOF mark.** Determines whether PCEDIT will append an EOF (end-of-file) mark to the end of a file. The EOF marker is a ^Z (ASCII 26).

| | |
|---|---|
| NO | The EOF marker will be added to the end of saved files. |
| YES | PCEDIT will not append the EOF marker to saved files. |

*Note ASPECT scripts and PROCOMM PLUS files do not require an EOF mark.*

**Indentation (ASPECT mode).** Specifies the number of spaces to indent in the ASPECT input mode. When a new line is added, the cursor will be adjusted based on the contents of the previous non-blank line. Its value can range from 0 to 119.

*Note Indenting blocks of code within an ASPECT source file can make it easier to read and maintain - and, since all ASPECT scripts are compiled, indentation has no effect on speed or execution. It's recommended that you logically indent your code!*

**Indentation (WP mode).** Specifies the indentation used for a new paragraph in WP mode. Values can range from 0 to 119.

**Use Wordwrap (WP mode).** Specifies whether PCEDIT will automatically move words that reach the right margin down to the left margin value of the next line. Wordwrap is only used in WP mode.

| | |
|---|---|
| YES | PCEDIT will move words to the left margin column of the next line. |
| NO | PCEDIT will not move words; instead, you can type beyond the right margin column value. |

**Right justify (WP mode).** Like most word processors, PCEDIT can "justify" text; extra spaces are added between words in a line to create an even right margin. Right justification is only used in WP mode.

| | |
|---|---|
| NO | Lines of text will retain a ragged right margin. |
| YES | PCEDIT will add extra spaces to create an even right margin. |

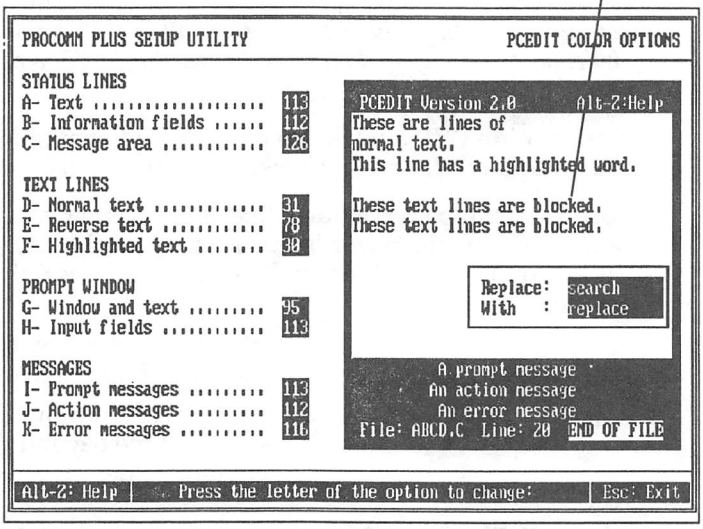
**Left margin (WP mode).** Specifies the left margin. The default is column 1, with a minimum of column 1 and a maximum of column 120.

**Right margin (WP mode).** Specifies the right margin. The default is column 70, with a minimum of column 1 and a maximum of column 120; the right margin value must be greater than or equal to the left margin value.

## Editor Color Options

When you select EDITOR OPTIONS from the Setup Main Menu and then COLOR OPTIONS from the Setup Terminal Options Menu, PROCOMM PLUS displays this screen:

These lines show how text with the various attributes will appear.



The parameters on this screen control the colors that PROCOMM PLUS will use for displaying characters in PCEDIT. For each attribute, you can choose from 128 combinations of a foreground color (the color used for a character) and a background color (the color used for the area behind the character). Note that the background color specified for the Normal text attribute determines the background of the entire screen (except for the areas where text with other attributes appears).

- Press the letter key corresponding to the attribute you want to change.

  Setup displays a window containing all the possible color combinations for the attribute.

- Use the four cursor keys to move the highlight box to the color combination you want to use for the selected attribute.

  Setup updates the sample display in the right half of the screen to illustrate the appearance of the PCEDIT screen with the new color combination you've selected.

- When you're satisfied with your selection, press [Enter].
- When you've completed all of your changes to the editor colors, press [Esc].

*Note If certain text is invisible after you've changed colors, check whether you've specified the same color for an attribute's foreground and background (these are color combinations 0, 17, 34, 51, 68, 85, 102 and 119).*

*Note If you want to change the PCEDIT colors to black and white, start PROCOMM PLUS (or PCEDIT as a standalone program) using the /b switch. For more information about starting PROCOMM PLUS this way, see "Other Ways of Starting PROCOMM PLUS" in Chapter 1. Be sure to save your changes so that the editor screen will be displayed in black and white for all future PCEDIT sessions.*

## *Changing the Translation Table* [Alt]-[W]

Certain remote computers may send you characters you don't want. For example, "garbage" (strange-looking) characters may appear on your display and clutter up your text files, or they may cause your computer's speaker to beep. You can strip (or delete) or replace unwanted characters using the "translation table".

## To display the translation table

- Press [Alt]-[W].

OR

- Select CHANGE and then Translation from the Menu line.

TRANSLATION TABLE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0: 0 | 16: 16 | 32: 32 | 48: 48 | 64: 64 | 80: 80 | 96: 96 | 112:112 |
| 1: 1 | 17: 17 | 33: 33 | 49: 49 | 65: 65 | 81: 81 | 97: 97 | 113:113 |
| 2: 2 | 18: 18 | 34: 34 | 50: 50 | 66: 66 | 82: 82 | 98: 98 | 114:114 |
| 3: 3 | 19: 19 | 35: 35 | 51: 51 | 67: 67 | 83: 83 | 99: 99 | 115:115 |
| 4: 4 | 20: 20 | 36: 36 | 52: 52 | 68: 68 | 84: 84 | 100:100 | 116:116 |
| 5: 5 | 21: 21 | 37: 37 | 53: 53 | 69: 69 | 85: 85 | 101:101 | 117:117 |
| 6: 6 | 22: 22 | 38: 38 | 54: 54 | 70: 70 | 86: 86 | 102:102 | 118:118 |
| 7: 7 | 23: 23 | 39: 39 | 55: 55 | 71: 71 | 87: 87 | 103:103 | 119:119 |
| 8: 8 | 24: 24 | 40: 40 | 56: 56 | 72: 72 | 88: 88 | 104:104 | 120:120 |
| 9: 9 | 25: 25 | 41: 41 | 57: 57 | 73: 73 | 89: 89 | 105:105 | 121:121 |
| 10: 10 | 26: 26 | 42: 42 | 58: 58 | 74: 74 | 90: 90 | 106:106 | 122:122 |
| 11: 11 | 27: 27 | 43: 43 | 59: 59 | 75: 75 | 91: 91 | 107:107 | 123:123 |
| 12: 12 | 28: 28 | 44: 44 | 60: 60 | 76: 76 | 92: 92 | 108:108 | 124:124 |
| 13: 13 | 29: 29 | 45: 45 | 61: 61 | 77: 77 | 93: 93 | 109:109 | 125:125 |
| 14: 14 | 30: 30 | 46: 46 | 62: 62 | 78: 78 | 94: 94 | 110:110 | 126:126 |
| 15: 15 | 31: 31 | 47: 47 | 63: 63 | 79: 79 | 95: 95 | 111:111 | 127:127 |

F1▶ Save F2▶ Toggle Screens F3▶ Table On F4▶ Table Off ESC▶ Exit

Translation Table INACTIVE

NUMBER TO CHANGE ⟹ NEW VALUE ⟹

The status of the translation table.

This table lists pairs of ASCII character values. Each value represents a particular character. To determine the characters corresponding to each ASCII value, see "ASCII Table" in the appendix titled "Technical Information".

If you've activated the translation table, PROCOMM PLUS "filters" the incoming data, replacing the character corresponding to the ASCII value in the first column in each pair with the character corresponding to the value in the second column.

## To display the rest of the translation table

Your display can show half of the translation table at a time. To see the other half:

- Press [F2].

## To change a translation pair

- Type the ASCII value corresponding to the character you want to translate (the number in the first column in the pair).
- Press [Enter].

- Type the ASCII value corresponding to the character which you want to replace the character specified in the preceding step.
- Press [Enter].

*Note The translation table affects only data received from a remote computer.*

*Note To strip the character specified next to NUMBER TO CHANGE, enter 0 next to NEW VALUE. For example, to prevent your computer from beeping as a result of characters sent from the remote computer, enter 7 next to NUMBER TO CHANGE, and enter 0 next to NEW VALUE.*

*Note If the data shows characters with ASCII values from 128 through 255 that should appear as characters with ASCII values from 0 through 127, you can translate them down by going to the second screen of the translation table and replacing each ASCII value with its value less 128. You may also set the General Options Translation Table Setup field to STRIP.*

### To save your changes

- Press [F1].

  This saves your changes in the PCPLUS.XLT file on disk. This means that your changes will be in effect the next time you activate the translation table during either the current session or a future session with PROCOMM PLUS. If you have already activated the translation table before making changes but do not save your changes afterwards, the changes will be in effect only for the current session, but not for a future session.

### To activate the translation table

- If you have just made changes in the translation table, save them on disk by pressing [F1].

  This step is necessary if you have just made changes because when you activate the translation table in the next step, PROCOMM PLUS reads the translation table from the PCPLUS.XLT file on disk.
- Press [F3].

*Note If you want the translation table to be activated when you start PROCOMM PLUS, you can specify this using the Setup facility (see "General Options" in this chapter).*

### To deactivate the translation table

- Press [F4].

### To exit the translation table

- Press [Esc].

## *Changing the Keyboard Mapping* [Alt]-[F8]

PROCOMM PLUS lets you remap (redefine) any of 79 keys. Redefining a key changes the effect of pressing the key. You can specify a different set of key mappings for each of the 33 terminal emulations.

*Note Before changing any key assignments, make a* ***backup copy*** *of the PCPLUS.KBD file to save the current key assignments. In order to create a new PCPLUS.KBD file, you must re-install PROCOMM PLUS; it's much easier to make a backup of the original keyboard mappings!*

*Note The keyboard mapping facility is accessed through an external program called PCKEYMAP. To use it, you must ensure the following:*

- *If you're using a hard disk system, the file COMMAND.COM must be present in the root directory of your hard disk, and the file PCKEYMAP.EXE must be present in either the current directory or the directory specified with the "SET PCPLUS=" command in your AUTOEXEC.BAT file.*
- *If you're using a floppy disk system, the file COMMAND.COM must be present on the disk in drive A, and the file PCKEYMAP must be present on the disk in the current drive.*
- *Your computer must have enough memory left to run PCKEYMAP.*

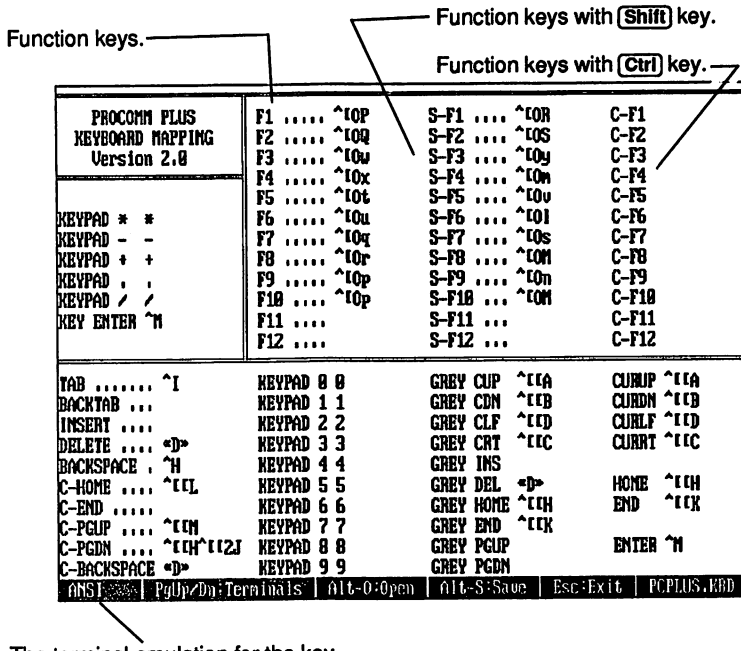
To change the keyboard mapping:

- Press [Alt]-[F8].

OR

- Select CHANGE and then Key Mapping from the Menu line.

PROCOMM PLUS displays the current key mappings for the current terminal emulation.




*Note You can also access the keyboard mapping facility from DOS using the PCKEYMAP program.*

- Press [space bar], [PgUp] or [PgDn] until the terminal whose key mappings you want to change appears at the bottom left of the screen.
- Press the key you want to change.
- Type the new code for the key.

  You can enter up to 10 characters for each key.
- Press [Enter].
- To open another keyboard map file, press [Alt]-[O].

  PROCOMM PLUS prompts you for the name of the file. The *.KBD* extension is not required.

- To save the currently-loaded keyboard file to disk, press [Alt]-[S]. PROCOMM PLUS does not exit PCKEYMAP.
- To exit the keyboard-mapping screen, press [Esc].

  If you've made any changes, PROCOMM PLUS asks if you want to save them.

*Note You must save your changes not only if you want to use them during your next PROCOMM PLUS session, but also if you want to use them during the current session. Editing a keymap will* ***not*** *automatically load it as the current keymap; you can only load a map by starting PROCOMM PLUS, specifying it in a Dialing Directory entry or using the ASPECT KLOAD command.*

- Press [Y] to save the changes, or press [N] to return to the original key assignments.

See the "Terminal Emulation" appendix for listings of the default key mappings for each terminal emulation.

Three "special" keys are used in PCKEYMAP. Press [Ctrl]-[@] (without pressing [Shift]) to insert a null (ASCII 0) into the string; the null is represented by the characters <<0>>. Similarly, you can press [Ctrl]-[^] (without pressing [Shift]) to insert a control-caret (ASCII 30) into the string; the control-caret is displayed as <<^>>. Finally, you can press [Ctrl]-[Backspace] to insert a delete (ASCII 127) into the string; it's represented by the characters <<D>>.

*Note For information about including control codes in a key mapping, see "Translating Control Codes" in Appendix D.*

*Note The keyboard mapping facility lets you use any of the 79 mappable keys or key combinations to send character strings, just as you use the [Alt]-key combinations for Meta keys. You can specify a different set for each of the 33 terminal emulations. The [Alt]-key Meta keys are available regardless of which terminal emulation you're using. For more information about the [Alt]-key Meta keys, see "Meta keys" in Chapter 7.*

CHAPTER

# 9

# Using Host Mode


Overview ..... 196
Setting Up for Host Mode ..... 197
*Setting Up PROCOMM PLUS Host* ..... *197*
*Setting Up the User File* ..... *198*
Starting Host Mode ..... 200
When a Remote User Logs On ..... 202
What Remote Users Can Do ..... 204
*Normal and Limited Users* ..... *204*
*Privileged Users* ..... *206*
What the System Operator Can Do ..... 208
*Controlling the Remote User's Keyboard* ..... *208*
*Entering Chat Mode* ..... *208*
*Disconnecting the Remote User* ..... *208*
*DOS Gateway* ..... *208*
*Logging On Locally* ..... *209*
*Exiting Host Mode* ..... *210*
Managing Host Files ..... 210
*The Log-On Message File* ..... *210*
*The New User File* ..... *211*
*The Help File* ..... *211*
*The Alternate Download Menu File* ..... *211*
*The Alternate Regular Menu File* ..... *212*
*The Alternate Privileged Menu File* ..... *212*
*The Alternate File Protocol Menu File* ..... *212*
*The Alternate Mail Read Menu File* ..... *212*
*The History File* ..... *213*
*The Upload Directory File* ..... *213*
*The Mail Files* ..... *214*
*Where to Keep These Files* ..... *215*

# Overview

The PROCOMM PLUS Host mode lets a remote user log on to your computer and use it as a remote bulletin board system, or "BBS". Host mode features include:

- Uploading and downloading files.
- Sending and receiving messages (sometimes called *electronic mail*).
- Running PROCOMM PLUS or DOS commands on your computer by the remote user.
- Three levels of security.
- A customized log-on message.
- A history of system activity.
- On-line help.
- ASPECT language support.
- Custom-built menus, new user files and file listings.

*Note If you have a problem while using Host mode, see "Problems with Host Mode" in the "Common Questions" appendix.*

# Setting Up for Host Mode

Before starting Host mode, make sure your computer and modem are set up as described in Chapter 1.

*Note It's especially important that you properly set the CD and DTR switches on your modem.*

## Setting Up PROCOMM PLUS Host

You'll need to specify the following information using the Setup facility (as described in Chapter 8):

**Welcome Message.** This is the message a remote user sees after connecting to your system. See "Host Mode Options" in Chapter 8 for more information.

**System Type.** Your system can be either "open" or "closed". If your system is open, any new user will be able to log on to your system. If your system is closed, only users you specify will be able to log on. "Setting Up the User File" in this Chapter describes how to designate the users that can log on to a closed system. To specify whether your system is open or closed, see "Host Mode Options" in Chapter 8.

**Auto Baud Detect.** This controls whether PROCOMM PLUS will automatically match baud rates with a user calling at a different baud rate. See "Host Mode Options" in Chapter 8.

**Connection Type.** This specifies whether the remote computers will be connected to yours via modem or a direct cable (sometimes called a "null modem"). See "Host Mode Options" in Chapter 8.

**Host timeout.** This specifies how long your Host system will wait for a user to type a key before disconnecting. See "Host Mode Options" in Chapter 8.

**Goodbye action.** This determines the action Host will take when a user selects the Goodbye command; Host may recycle for the next user, exit back to PROCOMM PLUS or allow the remote user to stay online for external processing. See "Host Mode Options" in Chapter 8; for an example of external processing, see Chapter 5 of your ASPECT SCRIPT LANGUAGE REFERENCE MANUAL.

**New User level.** This specifies the access level PROCOMM PLUS will assign new users during their first call. See "Host Mode Options" in Chapter 8.

**Upload Directory.** This names the directory where you want to store any files received from remote users. See "Host Mode Options" in Chapter 8.

**Download Directory.** This specifies the directory which remote users can access using the Files and Download commands. See "Host Mode Options" in Chapter 8.

**SHELLBOOT.** This determines whether Host will automatically reboot your PC if carrier is lost while a remote user has Shelled to DOS. See "Host Mode Options" in Chapter 8.

**Hangup Command and Auto Answer Command.** Make sure the commands specified using the Setup facility match those required by your modem. See "Modem Command Options" in Chapter 8.

## Setting Up the User File

For each remote user of Host mode, PROCOMM PLUS keeps a user name, password and privilege level in a file called PCPLUS.USR. This file is an ordinary ASCII text file; the information about each user occupies one line.

Information about a new user can be entered in the PCPLUS.USR file in three ways:

- PROCOMM PLUS enters information about a new user when that user first logs on. This works only if your system is open (if your system is closed, a *new* user cannot log on).
- You can enter information about a new user using your word processor. Remember, each line in the PCPLUS.USR file **must** end with a carriage return/line feed!
- You can enter information about a new user by logging on as if you were that user (see "Logging On Locally" in this chapter).

If your system is closed, you must use one of the last two methods to add the user information in the PCPLUS.USR file before starting Host mode. If your system is open, PROCOMM PLUS will add new users when they log on, so you don't need to do anything before starting Host mode.

Host allows three categories (or *access levels*) of remote users—"limited users", "normal users" and "privileged users". Privileged users can do more when connected than normal users, while limited users are restricted to certain Host functions. The user access level is indicated in the PCPLUS.USR entry by a 0 for limited users, a 1 for normal users and a 2 for privileged users. When PROCOMM PLUS adds a new user, that user is given an access level of 0 or 1 (depending on the setting of the New User Level Setup parameter); you can change this using your word processor. If you're adding a user with your word processor, you can assign any of the three access levels. Note that Level 2 users have access to **all** functions (including Shell to DOS and Abort Host).

The format for each entry in the PCPLUS.USR file is:

*Lastname;Firstname;Password;Privilege;Comment*

| | |
|---|---|
| ***Lastname;Firstname*** | The total number of characters in the last name and first name can be no more than 30, and they must be entered in uppercase letters. The apostrophe (') and hyphen (-) characters are also allowed. |
| ***Password*** | The password can consist of no more than eight characters. If you're entering it using your word processor, **you must enter the password in uppercase letters.** If the password is first entered by a new user logging on, it can be entered in either upper- or lowercase letters. Regardless of who first entered the password and in which form, the password can be entered in either upper- or lowercase letters when the user logs on afterwards. |
| ***Privilege*** | The privilege level is a single digit. The number 0 indicates a limited user, a 1 indicates a normal user and a 2 indicates a privileged user. |
| ***Comment*** | You can optionally include a comment. The comment for every new user added by PROCOMM PLUS is "* NEW USER *", but you can change this comment to anything you want using your word processor.<br><br>The total number of characters in the line cannot exceed 80 characters. |

Here are examples of two lines in a PCPLUS.USR file:

```
WAYNE;BILL;STEW;1; * SALES MANAGER, EASTERN REGION *
SMITH;JANE;POODLE;0; * NEW USER *
```

*Note PROCOMM PLUS allows you to omit the last name in one entry in the file (the last name can be omitted in other entries only if there are 30 characters in the first name). This lets you enter a special entry for yourself, the SYSOP (short for "system operator"), so that remote users can address mail to "SYSOP". For example:*

**;SYSOP;MYBOARD;2; * SYSTEM OPERATOR ***

*Notice that although you omit the last name, you still need to enter the semicolon before the first name.*

*Note PCPLUS.USR was placed in the PCPLUS directory when you installed PROCOMM PLUS. Generally, you should make sure that PCPLUS.USR is in the directory that's specified by the SET PCPLUS= command in your AUTOEXEC.BAT file. PROCOMM PLUS looks for PCPLUS.USR in that directory if it doesn't find it in the current directory.*

*On the other hand, you may want to keep separate PCPLUS.USR files in separate directories. You can copy the original PCPLUS.USR file to any other directory and then edit it using your word processor, or you can create a new one in any directory.*

Host will **not** append new users correctly to PCPLUS.USR if:

- it ends with a ^Z character (generated by some editors as an EOF character) that's not preceded by a carriage return/line feed combination.
- a ^Z occurs anywhere in the file except at the end.

## *Starting Host Mode*

You can start Host mode either from Terminal mode or from a script file.

*Note If you haven't specified an Upload directory and a Download directory,* **be sure** *that you change to the proper directory before you start Host mode, and* **be sure** *that the current directory contains only files you want remote users to access.*

*The first time you start Host mode after installing PROCOMM PLUS on your computer, PROCOMM PLUS creates several files that it needs for working in Host mode. Generally, before starting Host mode for the first time, you should change the current directory to the directory that's specified with the "SET PCPLUS=" command in your AUTOEXEC.BAT file. For more information, see "Where to Keep These Files" at the end of this chapter.*

## To start from Terminal mode

- If you have not specified a Download directory and an Upload directory (see "Host Mode Options" in Chapter 8), make sure that the current directory is the one you want to let the remote user access.

  To change the current directory, press [Alt]-[F7], or select Change and then Directory from the Menu line.

- Make sure PROCOMM PLUS is set to the maximum baud rate at which your modem can operate.

  To change the baud rate, press [Alt]-[P], or select Change and then Line Settings from the Menu line.

- Press [Alt]-[Q] to place PROCOMM PLUS in Host mode.

OR

- Select MODES and then Host from the Menu line.

If PROCOMM PLUS is already connected to another computer (via a modem rather than a direct connection), it will begin the log-on process.

## To start from a script file

In the script file:

- If you have not specified a Download directory and an Upload directory (see "Host Mode Options" in Chapter 8), make sure that the current directory is the one you want to let the remote user access.

  To change the current directory, use the CHDIR command in the script file.

*Note If you haven't specified an Upload directory and a Download directory, files in the current directory are available to all Level 1 users for downloading, so be sure the current directory contains only files that you want remote users to be able to access.*

- Make sure PROCOMM PLUS is set to the maximum baud rate your modem can handle.

  To change the baud rate, use a SET BAUDRATE command in the script file.

- Use the HANGUP command to make sure the line is hung up before a remote user calls.

OR

- Test to see if PROCOMM PLUS is already connected.

  Use the IF CONNECTED command to test the line status.

- Start Host mode using the HOST command.

To automatically switch to Host mode when you start PROCOMM PLUS, create a script file called AUTO.ASP with the single command HOST, then start PROCOMM PLUS by typing PCPLUS /FAUTO at the DOS prompt. If you want to start PROCOMM PLUS in Host mode at a particular time, create a script file with the SUSPEND UNTIL and HOST commands, then run the script (which will pause execution of the HOST command until the proper time).

## *When a Remote User Logs On*

When your PC is running in Host mode and a remote user connects, PROCOMM PLUS displays the welcome message specified in the Setup Host Mode Options and prompts the user to enter a name. PROCOMM PLUS checks the PCPLUS.USR file for that name and takes the appropriate action.

- If the name entered by the user is not in the PCPLUS.USR file and:
  - the Host system is **closed**, the user is disconnected.
  - the Host system is **open**, the name is added to the PCPLUS.USR file, the user is prompted to enter and confirm a password, the password is added to the file and the user is given access to the Host system. The access level for this user is determined by the New User Level Setup value.
- If the name entered by the user is in the PCPLUS.USR file, Host prompts for a password:
  - If the password matches what's in the file entry for that user name, the user is given access to the Host system at the privilege level specified in PCPLUS.USR.

- If the password entered does not match what's in the file entry, the user is given two more chances to enter the password correctly. If it is not entered correctly on the third attempt, the user is disconnected (and the user name is logged to the PCPLUS.HST file).

A user is allowed 5 attempts to enter a valid name (a carriage return counts as an attempt).

When a remote user is given access to the Host system, the contents of the PCPLUS.NWS file are displayed (if this file exists; see "The Log-On Message File" in this chapter). The user can terminate this display by pressing Ctrl-C.

*Note An additional file is displayed before PCPLUS.NWS for new users; the PCPLUS.NUF file can be used to inform users on their first call of system rules or important information. This file is only displayed during a user's first call.*

If the user has new mail (addressed to him or her) that hasn't been opened, Host displays "*** YOU HAVE NEW MAIL! ***".

Next, the Host-mode menu is displayed. When a new remote user connects to PROCOMM PLUS' Host mode, the remote computer's screen looks like this:

```
Welcome to PROCOMM PLUS Host!

First name: Fred
 Last name: Garvin
FRED GARVIN
Is this correct (Y/N)? Y

Password: ****

F)iles      U)pload     D)ownload
H)elp       T)ime       C)hat
R)ead mail  L)eave mail G)oodbye

Your choice?

User On-line | HOST MODE (Alt-Z for HELP) |  1200 | FRED GARVIN
```

These are the commands the remote user can select.

# What Remote Users Can Do

The remote user can select a command from the Host-mode menu by typing its first letter. What the user can do depends on his or her access level.

## Normal and Limited Users

Here are the commands available to the normal user:

**Files.** This command displays a list of files available for downloading. Host selects a listing method in the following order: in the PCPLUS.HDL file listing (if you've created one), in the download directory (if you've specified one in Setup) or in the current directory (if you didn't specify a download directory). When the user selects this command, PROCOMM PLUS asks for a file specification; the user can then use the DOS wildcards * and ? to search for certain files (for example, entering the file specification *.DOC will list all files with the file extension .DOC). If the user doesn't type a file specification before pressing [Enter], all files in the directory will be listed. Limited users can't transfer files, but they may use the Files command.

*Note If you create a PCPLUS.HDL file, Host will not prompt for a file specification.*

**Upload.** This command begins a file transfer from the remote user's computer to your PC. The files are stored in the Upload directory, if you've specified one (see "Host Mode Options" in Chapter 8), or otherwise in the current directory. This command is not available if you're logging on to your Host system "locally" (from your PC's keyboard).

*Note By specifying an upload directory that's not the same as the download directory, you can review files received from remote users before making them available for downloading. This helps to make your system secure.*

**Download.** This command transfers files from the Download directory, if you've specified one (see "Host Mode Options" in Chapter 8), or otherwise from the current directory, to the remote user. This command is not available when you're logging on to your Host system locally.

*Note If you do not specify a Download directory, make sure that the current directory contains only files you want to be downloaded.*

**Help.** This command displays the PCPLUS.HHP file. A sample of this file is supplied on your distribution diskettes, but you can modify it with your text editor. PCPLUS.HHP can be any length.

**Time.** This command displays the current time, the time the remote user logged on and the amount of time the user has been connected.

**Chat.** This command sounds an alarm on your computer (unless the alarm sound has been turned off using the Setup facility—see "Alarm Sound" in Chapter 8) and waits for you to press [F1]. When you press [F1], PROCOMM PLUS places your computer in Chat mode; each character you type is immediately sent to the remote user. Pressing any other key stops the paging bell. The remote user can terminate a Chat request by pressing [Ctrl]-[C]. This command is not available when you're logging on to your Host system locally.

**Goodbye.** This command displays the same information as the Time command and terminates the session. Host will prepare itself for the next caller. Additionally, you can specify external processing or force Host to exit back to Terminal mode or a script (depending on the Goodbye Action Setup parameter). For more information on Goodbye Action, see "Host Mode Options" in Chapter 8.

**Leave mail.** This command lets the remote user leave private and public messages. Private messages can be read only by the addressee, the sender and the Sysop.

**Read mail.** This command allows the remote user to read messages, reply to them and delete their personal mail. All public messages will be displayed, as well as private messages to and from the user. A *Read New* function allows users to read messages addressed to them that haven't been previously read. A *Search Mail* command allows users to scan the message base by the To, From and Subject header fields. Host will alert users at log-on if unopened mail (addressed to them) is waiting.

*Note You can customize your Host menu by using the optional PCPLUS.HRM and PCPLUS.HPM files. Although the commands won't change, you can add customized ANSI graphics and colors. PCPLUS.HRM will be displayed to normal and limited users only (access levels 0 and 1), while PCPLUS.HPM will be displayed only to priviledged users (access level 2). If you create a PCPLUS.HPM file, make sure it contains the Shell to DOS and Abort Host commands!*

You can control the amount of time Host will wait for a user to press a key with the User Inactivity Timeout Setup value. The default is 5 minutes of inactivity. The inactivity timeout is disabled for local logons.

If no one's logged on (remotely or locally) for more than three minutes, Host "blanks" the local display. To indicate that Host is still running on your PC, a highlighted message line will scroll down your screen; press any key to return to the Host local display.

## Privileged Users

The commands available to the privileged (Level 2) user include all those available to the normal user, plus two more that give the privileged user complete control of the Host system.

**Abort.** This command lets the remote user abort Host mode operation and return to Terminal mode (if Host was started from Terminal mode) or to a script file (if Host mode was started from a script file). This command has the same effect as pressing [Esc] to exit Host mode, except that the remote user (rather than you) is now using PROCOMM PLUS on your computer.

When the remote user selects this command, PROCOMM PLUS asks whether to disconnect the remote user before returning to Terminal mode. If the remote user wants to continue the session, he should *not* disconnect.

*Note If the remote user has aborted Host mode without disconnecting, PROCOMM PLUS returns to Terminal mode (or if Host mode was started from a script file, to the script file).*

*Note After using the Abort command, the remote user can control your computer by sending it remote script commands. PROCOMM PLUS will accept remote commands only if Remote commands are set to ON in the Setup facility. For more information about remote commands, see Chapter 2 of your ASPECT SCRIPT LANGUAGE REFERENCE manual.*

**Shell.** This command lets the remote user access DOS on your computer, just as if he were sitting at your keyboard.

**IMPORTANT: Because a privileged user has access to DOS on your computer, he can access any file on your computer (he can even reformat your disk!). Consider carefully before assigning a remote user privileged status.**

The Shell command redirects all monitor and keyboard I/O to the com port. Since COM I/O does not function the same as video and keyboard I/O, certain conditions may cause your computer to appear locked up. One such condition is running a program that writes directly to the screen buffer. Other such conditions include pressing [Backspace], [Esc], and possibly other key sequences when using DOSEdit, CED or similar keyboard-enhancing programs. This problem arises from DOS and the other programs, not PROCOMM PLUS.

*Note You can control whether or not a loss of carrier during SHELL operation will cause an automatic reboot of your PC with the Reboot Shell Setup parameter. This function requires the presence of HCOMMAND.RTE in the current directory (or the directory specified by the PCPLUS environment variable).*

*Note Remote users can use the Shell command only if your modem is using COM1 or COM2 or (if your computer is using DOS version 3.3 or higher) COM3 or COM4. This is a limitation of DOS.*

*Note For the Shell command to work, the file* COMMAND.COM *must be present in the directory named by the COMSPEC environment variable—if you're using a floppy disk system, it must be present on the disk in drive A. Also, your computer must have enough memory left to run the programs or DOS commands run by the remote user.*

Besides the two additional commands that are not available to the normal user, the privileged user has these additional capabilities:

- The privileged user is shown the PCPLUS.HPM customized Host menu screen (if you've created one).
- The privileged user can access any directory when uploading or downloading by including a directory path as part of the file specification (a normal user can access only the specified Upload and Download directories, if they are defined, or otherwise only the current directory).
- When the privileged user uses the Files command, PROCOMM PLUS lists the files in the current directory (rather than the Download directory). The user can also display a list of the files in any directory by specifying a pathname in the file specification. If you've specified a customized PCPLUS.HDL file, it's ignored and the actual directory is displayed.
- When the privileged user uses the Upload command, PROCOMM PLUS transfers files into the current directory (rather than into the Upload directory). The user can transfer files into some other directory by adding a pathname to the file specification. Note that if the user specifies a filename that already exists in the destination directory, PROCOMM PLUS will replace that file with the newly uploaded file (after confirmation).
- When the privileged user uses the Download command, PROCOMM PLUS transfers files from the current directory (rather than from the Download directory). The user can transfer files from some other directory by adding a pathname to the file specification.

# What the System Operator Can Do

Several functions are available to you (as the SYSOP) while a remote user is logged on:

## Controlling the Remote User's Keyboard

When a remote user connects to PROCOMM PLUS Host, your screen shows everything that appears on the remote user's screen, including the log-on procedure and the menu of commands. PROCOMM PLUS will respond to anything you type just as if the remote user had typed it.

*Note If you're using special ANSI graphic characters or colors within customized menus, these will not display correctly on your local screen (since terminal emulation isn't used by Host). However, these sequences are sent correctly to the remote user.*

## Entering Chat Mode

When a remote user is connected, you can enter Chat mode at any time to converse back and forth.

To enter Chat mode:

- Press [F1].

Each character is sent to the remote user as you type it.

To return to normal Host mode operation:

- Press [Esc].

## Disconnecting the Remote User

- Press [Ctrl]-[X].

PROCOMM PLUS disconnects and prepares to answer another call.

## DOS Gateway

- Press [Alt]-[F4].

PROCOMM PLUS shells to DOS. If a user is online, the message "System has been temporarily suspended, please standby..." will be sent to the remote computer. The Gateway is not available if a privileged user has shelled to DOS (or if a user is transferring a file).

To exit Gateway, type "EXIT" at the DOS prompt. If a user is online, the message "System ready for input, please continue..." will be sent to the remote computer.

## Logging On Locally

When a remote user is *not* connected, you can log on "locally" and use all the commands on the Host menu (except for Upload, Download and Chat, which only work when a remote caller is logged on). Logging on locally is an easy way to read and leave messages (and it also lets you test how your system works).

*Note If you're using special ANSI graphic characters or colors within customized menus, these will not display correctly on your local screen (since terminal emulation isn't used by Host). However, these sequences are sent correctly to the remote user.*

- Press [F2].

  PROCOMM PLUS asks if you want to continue answering calls from remote users.

  - If you respond by pressing [N], PROCOMM PLUS won't let a remote user connect while you're logged on.
  - If you respond by pressing [Y], PROCOMM PLUS will let a remote user connect to your system while you're logged on. However, the remote user will not be able to log on until you log off. Your modem's speaker (if it has one, and it's enabled) will indicate that a remote user is calling, and the CD light (on external modems) indicates the user has connected. If you want to let the user log on, press [Ctrl]-[X] or (if the Host-mode menu is on your screen) select the Goodbye command.

- Press [Y] to let a remote user connect to your system while you're logged on.

OR

- Press [N] to prevent a remote user from connecting while you're logged on.

  PROCOMM PLUS asks if you want to log on as the SYSOP.

If you respond by pressing [Y], you won't need to enter a name and password; if you respond by pressing [N], you'll need to enter a name and password just like any remote user. In either case, your screen will then display the same menu seen by a remote user.

- Press [Y] to log on as the SYSOP.

OR

- Press [N] to log on as a remote user.

OR

- Press [Enter] to cancel the log-on and return to waiting for a call.

### Exiting Host Mode

- Press [Esc].

If a remote user is connected, PROCOMM PLUS asks whether to disconnect the user.

- Press [Y] to disconnect the user and exit Host mode.

OR

- Press [N] to exit Host mode but maintain the connection.

  PROCOMM PLUS returns you to Terminal mode or (if Host mode was started from a script file) to the script.

## *Managing Host Files*

In addition to the PCPLUS.USR file, there are other files used in Host mode with which you may need to work from time to time.

### The Log-On Message File

If you create a file called PCPLUS.NWS (in the directory specified in the SET PCPLUS= command in your AUTOEXEC.BAT file or in the current directory), PROCOMM PLUS will display the contents of this file to a remote user after the user logs on. You can create this file with any word processor that can save a file in ASCII format. The file can be any length; PROCOMM PLUS will break the text every 23 lines and display "[MORE]" on the 24th line to indicate that more text remains in the file.

*Note You can have the PCPLUS.NWS file display graphics characters (and color, by including ANSI escape sequences in the file); however, unless you're certain that all of the user terminals can display these characters, it's better to leave them out.*

## The New User File

If you create a file called PCPLUS.NUF (in the directory specified in the SET PCPLUS= command in your AUTOEXEC.BAT file or in the current directory), PROCOMM PLUS will display it once (during a user's first call). You can use this file to inform a first-time user of system rules or provide special help. You can create this file with any word processor that can save a file in ASCII format. The file can be any length; PROCOMM PLUS will break the text every 23 lines and display "[MORE]" on the 24th line to indicate that more text remains in the file.

*Note Like the PCPLUS.NWS file, the PCPLUS.NUF file can display graphics and color (by including ANSI escape sequences in the file).*

## The Help File

When the remote user selects the Help command from the Host-mode menu, PROCOMM PLUS displays the contents of the file PCPLUS.HHP. This is an ordinary ASCII text file that you can modify using any word processor that works with ASCII files.

*Note Like the PCPLUS.NWS file, you can have the PCPLUS.HHP file display ANSI graphics characters and color (by including ANSI escape sequences in the file).*

## The Alternate Download Menu File

The file PCPLUS.HDLis an **optional** alternate file listing that you create with your word processor. If Host finds this file (in the directory specified in the SET PCPLUS= command in your AUTOEXEC.BAT file or in the current directory), it will be displayed with the Files command to level 0 and 1 users instead of the standard DOS-format Download directory. Level 2 users will still see the standard DOS-format directory. PCPLUS.HDL can contain up to 79 characters of text per line; for example, a single PCPLUS.HDL file description might look like this:

**THISBBS.HLP 12321 08/01/90 | Complete guide to PCPLUS Host system**

If you don't enter a description for a download directory file in PCPLUS.HDL, it's effectively "invisible" to the user. However, the file can still be downloaded if you supply the user with the filename. This is an ordinary ASCII text file, and it can contain ANSI graphics and colors.

## The Alternate Regular Menu File

The file PCPLUS.HRM is an **optional** alternate Host command menu that you create with your word processor. If Host finds this file (in the directory specified in the "SET PCPLUS=" command in your AUTOEXEC.BAT file or in the current directory), it will be displayed to level 0 and 1 users instead of the standard Host menu. Level 2 users will still see the standard Host menu (or the PCPLUS.HPM file, if you've created one). Host does not generate a final carriage return at the end of this file but does append a question mark, so you can customize your Host menu prompt; for example, if the prompt "Please enter your command" appears as the last line of the file (without an additional carriage return), the user would see:

**Please enter your command?**

directly before Host places the cursor for input. This file can contain ANSI graphic characters and colors.

## The Alternate Privileged Menu File

The PCPLUS.HPM file is similar to the PCPLUS.HRM file; however, it's only displayed to privileged users (access level 2). This file should include the Shell to DOS and Abort Host commands.

## The Alternate File Protocol Menu File

The PCPLUS.HXM file is similar to the PCPLUS.HRM file. It's displayed to all users (regardless of access level) instead of the default transfer protocol selection menu.

## The Alternate Mail Read Menu File

The PCPLUS.HMM file is similar to the PCPLUS.HXM file. It's displayed to all users (regardless of access level) instead of the default mail read option menu.

*Note If you're using special ANSI graphic characters or colors within customized menus, these will not display correctly on your local screen (since terminal emulation isn't used by Host). However, these sequences are sent correctly to the remote user.*

## The History File

PROCOMM PLUS keeps information about what happens during Host operation in a file called PCPLUS.HST. Here are the kinds of entries that may appear in this file:

- The time you started Host mode.
- The time you exited Host mode.
- The time a remote user logged on.
- The time the remote user logged off.
- The time a remote user used the Shell command.
- The time a remote user used the Abort command.
- The time a remote user requested that you enter Chat mode.
- The name of a file downloaded by a remote user.
- The time each new message is entered, plus a message number.
- The first and last names of a user who entered three consecutive incorrect passwords while attempting to log on.
- The time carrier was lost during a call.
- The time Host disconnected a user due to inactivity.

PCPLUS.HST is an ordinary ASCII file that you can read or modify with any word processor that can work with ASCII files.

## The Upload Directory File

When a remote user uploads a file to your system, PROCOMM PLUS records this information in a file called PCPLUS.ULD:

- The name of the file.
- The name of the user that uploaded it.
- The comments (if any) entered by the user that uploaded the file.
- The date and time the file was uploaded.

*Note If the remote user selects a protocol that transfers the filename (such as* ZMODEM *or* YMODEM*), the filename under which the file is stored may differ from the name entered in* PCPLUS.ULD.

## The Mail Files

PROCOMM PLUS keeps messages left by remote users and the SYSOP in a file called PCPLUS.MSG. When a remote user or the SYSOP deletes a message, it remains in the PCPLUS.MSG file, even though it can't be read from within Host mode. You can use a program called PCMAIL, which is separate from but provided with PROCOMM PLUS, to read or remove deleted messages in the PCPLUS.MSG file.

When you use PCMAIL to remove the deleted messages, it also removes the header information for those messages from the PCPLUS.HDR file. The header consists of the identifying data at the beginning of a message (the addressee, the sender, the subject, the date and the time).

You can specify unattended message compression with the /C switch, allowing you to automatically "compress" your message base from an ASPECT script or a DOS batch file. The /C switch removes all deleted messages (*without* displaying them).

If headers contain references to message numbers, they may be invalid after compression.

### To start PCMAIL on a hard disk system

- Make sure the DOS prompt is showing on your screen.
- Type *cd\pcplus* and press [Enter].
- Type *pcmail* and press [Enter].

OR

- Type *pcmail /C* and press [Enter] for unattended message base compression. You will not be prompted.

### To start PCMAIL on a floppy-disk system

- Make sure the DOS prompt is showing on your screen.
- Insert your working copy of PROCOMM PLUS into drive A.
- Type *pcmail* and press [Enter].

### To use PCMAIL

- Press [R] to review a message.

  At the end of each message, PCMAIL lets you change the delete-status and the private-status of the message.

OR

- Press [A] to add a message.

OR

- Press [C] to compress the PCPLUS.MSG and PCPLUS.HDR files by removing deleted messages and message headers.

### To exit PCMAIL

- Press [Q].

## Where to Keep These Files

The first time you start Host mode after installing PROCOMM PLUS on your computer, PROCOMM PLUS creates these files in the current directory (except for PCPLUS.ULD, which is created when the first remote user uploads a file). When you start Host afterwards, PROCOMM PLUS looks for these files first in the current directory; if it doesn't find them in the current directory, it defaults to the directory that's specified with the "SET PCPLUS=" command in your AUTOEXEC.BAT file.

Generally, you should change the current directory (using [Alt]-[F7]) to that specified with "SET PCPLUS=" before you first use Host mode. If you do so, PROCOMM PLUS will create these files in that directory; and there will be only one set of Host files on your disk, regardless of which directory is current when you start Host at later times.

*Note You may want to maintain separate sets of files in different directories. For example, suppose you want to use Host mode for different groups of users or for different applications. When you start Host mode the first time, make sure the current directory is* not *the directory that's specified with the "SET PCPLUS=" command. You can then create a different directory for each group of users or for each application; if you change the current directory to one of these directories before you start Host mode afterwards, PROCOMM PLUS will maintain a unique log-on message file, history file, help file, upload-directory file and message file in that directory.*

*If you choose to maintain separate sets of these files in different directories, you may also want to maintain separate PCPLUS.USR files in those directories. For more information, see "Setting Up the User File" earlier in this chapter.*

# Appendices

Appendix A- Terminal-Mode Command Summary.....219
Appendix B- File-Transfer Protocols .....225
Appendix C- Common Questions .....235
Appendix D- Technical Information .....251
Appendix E- Terminal Emulation .....263
Appendix F- Making a Null Modem Cable.....287
Appendix G-Introduction to Communications .....289

APPENDIX

# A

# Terminal-Mode Command Summary

This appendix summarizes the commands available in Terminal mode. For details about each of these commands, see Chapter 7.

If a command can be selected from the Menu line, the required Menu items are shown below the Alt-key and Ctrl-key commands. For information about using the Menu line, see "Giving PROCOMM PLUS Commands" in Chapter 1.

| | | |
|---|---|---|
| **Auto Answer** | Alt-Y<br>or<br>Modes &<br>Answer | Sets your modem to automatically answer all incoming calls. |
| **Break Key** | Alt-B<br>or<br>Other &<br>Send Break | Sends a break to the remote computer. |
| **Change Directory** | Alt-F7<br>or<br>Change &<br>Directory | Changes the current directory. |
| **Chat Mode** | Alt-O<br>or<br>Modes &<br>Chat | Activates Chat mode, which lets you and the remote user type in different portions of the screen. |
| **Clear Screen** | Alt-C<br>or<br>Other &<br>Clear Screen | Clears the screen and resets the screen colors. |

| | | |
|---|---|---|
| **Clipboard** | Alt-= or File & Clipboard | Activates the Filename Clipboard, which can hold and send the names of files you wish to download. |
| **CR-CR/LF Toggle** | Alt-F3 or Change & CR-CR/LF | Switches between adding or not adding line-feeds to incoming text. |
| **Dialing Directory** | Alt-D or Dial | Activates the Dialing Directory. |
| **DOS Gateway** | Alt-F4 or Other & Gateway | Accesses DOS so that you can run DOS commands or other programs without exiting PROCOMM PLUS. |
| **Duplex Toggle** | Alt-E or Change & Echo | Switches between full and half duplex. |
| **Editor** | Alt-A or File & Editor | Accesses your text editor (if you've specified it using the Setup facility) or the built-in editor PCEDIT. |
| **Elapsed Time** | Alt-T or Other & Elapsed | Displays the elapsed time of the current call and the current date and time. |
| **Exit** | Alt-X or Quit | Exits PROCOMM PLUS. |
| **File Directory** | Alt-F or File & Directory | Lists the files in the current directory. |
| **Hang Up** | Alt-H or Other & Hangup | Hangs up the line and disconnects from the remote computer. |
| **Help** | Alt-Z or Help | Displays help information about the function you're currently using. |

| | | |
|---|---|---|
| **Host Mode** | Alt-Q<br>or<br>Modes &<br>Host | Activates Host mode. |
| **Init Modem** | Alt-J<br>or<br>Other &<br>Init Modem | Sends initialization string to modem. |
| **Kermit Server** | Alt-K<br>or<br>File &<br>Kermit Server | Sends Kermit server commands to the remote computer. |
| **Key Mapping** | Alt-F8<br>or<br>Change &<br>Key Mapping | Activates the keyboard mapping facility to change the key assignments for various terminal emulations. |
| **Line/Port Setup** | Alt-P<br>or<br>Change &<br>Line Settings | Changes the line settings (baud rate, parity, number of data bits number of stop bits), and the COM port used by your modem. |
| **Log File On/Off** | Alt-F1<br>or<br>File &<br>Toggle Log | Switches file logging (recording data that appears on your screen) on or off. |
| **Log File Pause** | Alt-F2<br>or<br>File &<br>Hold Log | Suspends or resumes file logging. |
| **Meta Keys** | Alt-M<br>or<br>Change &<br>Meta Keys | Calls the Meta key facility, where you add or change Meta key sequences. |
| **Monitor Mode** | Ctrl-\<br>or<br>Modes &<br>Monitor | Displays raw data received from the remote system. |
| **Printer On/Off** | Alt-L<br>or<br>Other &<br>Printer | Switches printing of data that appears on your screen on or off. |

| | | |
|---|---|---|
| **Program Information** | Alt-I or Other & Information | Displays what version of PROCOMM PLUS you're using, your serial number and the telephone numbers of DATASTORM's sales office, technical support department and BBS. |
| **Receive Files** | PgDn or File & Download | Starts downloading (receiving) a file from the remote computer. |
| **Record Mode** | Alt-R or Modes & Record | Records a procedure as a script file. |
| **Redisplay** | Alt-F6 or Modes & Redisplay | Displays data that has scrolled off your screen. |
| **Reset Terminal** | Alt-U or Other & Reset Terminal | Resets Terminal mode screen. |
| **Screen Pause** | Alt-N | Freezes data that's appearing on your screen. |
| **Screen Snapshot** | Alt-G or Other & Snapshot | Stores the contents of the screen in a file. |
| **Script Files** | Alt-F5 or File & Run Script | Executes (runs) a script file. |
| **Send Files** | PgUp or File & Upload | Uploads (sends) a file to the remote computer. |
| **Setup Facility** | Alt-S or Change & Setup | Activates the Setup facility, which lets you customize PROCOMM PLUS to suit your particular preferences and applications. |

| | | |
|---|---|---|
| **Toggle Lines** | Ctrl-- or Change & Toggle Lines | Toggles between video modes supported by your PC's hardware. |
| **Toggle Status** | Ctrl-] or Change & Toggle Status | Toggles the Terminal mode Status line on and off. |
| **Translate Table** | Alt-W or Change & Translation | Displays the translation table, which lets you strip (delete) or replace characters received from the remote computer. |
| **View a File** | Alt-V or File & View | Displays the contents of a file. |

APPENDIX

# B

# File-Transfer Protocols


Overview ..... 226

XMODEM ..... 226

KERMIT ..... 227

ASCII ..... 228

RASCII ..... 229

1K-XMODEM ..... 229

YMODEM ..... 229

MODEM7 ..... 230

TELINK ..... 230

ZMODEM ..... 230

WXMODEM ..... 230

SEALINK ..... 231

COMPUSERVE B ..... 231

1K-XMODEM-G ..... 231

YMODEM-G ..... 231

IMODEM ..... 232

External 1, 2, 3 ..... 232

Summary ..... 233

## Overview

In communications, a protocol is a set of rules or conventions that allows the participants to properly communicate and transfer files regardless of the hardware or software being used. Some of the rules that are established in a protocol are:

- **Block size.** This defines the amount of data that will be sent in one continuous block.
- **Duplex.** This defines the procedure for the sequence of transmissions. Information can be sent both directions at the same time (full duplex) or only one direction at a time (half duplex).
- **Handshaking.** This defines the procedure for responding to information sent, both correct and erroneous.
- **Error detection.** This defines the procedures for detecting an error. Both the header information and the data block must be checked.
- **Error correction.** This defines the procedure if an error is detected. Generally the error correction is a retransmission of the entire packet (header and data block). Occasionally the protocol will determine the error is not correctable and abort the transfer.

PROCOMM PLUS internally supports the following protocols and allows the direct use of three external protocols.

## XMODEM

In the late 1970's, Ward Christensen developed one of the first public domain "8-bit" error checking protocols. XMODEM is a block oriented error checking protocol that uses a 128 byte data block. It is also a single file protocol using the half duplex mode.

The protocol uses either CRC or checksum for error checking. It always attempts to use CRC first. If the sender does not acknowledge the first three requests for CRC, the receiver shifts to the checksum mode and continues its request for transmission using checksum as the error checking.

Although PROCOMM PLUS correctly implements this protocol, some other systems do not. As a result, the sender may begin sending using checksum while the receiver is expecting CRC. This is evident after PROCOMM PLUS has reported several CRC errors on the first block.

Most systems will work fine with the normal mode XMODEM, but some systems, such as CompuServe, have trouble meeting the standard XMODEM timing constraints. PROCOMM PLUS allows you to set XMODEM into a "relaxed" mode, which allows less critical timing. You may change to the "relaxed" mode at the Protocol General Options Setup screen.

## *KERMIT*

The XMODEM family requires a full 8 data bits per byte for proper transfer. Unfortunately, some computer systems cannot accommodate the 8th bit. Others can handle the 8th bit, but either the computer operating system or the modem are unable to cope with control characters (ASCII 0 through 31) and the DEL character (ASCII 127).

KERMIT was developed at Columbia University under the guidance of Frank da Cruz and released into the public domain. It's a block or packet-oriented protocol and uses a 7 or 8 data bit transmission. The protocol is designed to convert the 8th bit when needed, and to send it using a technique called "8th bit quoting" or "prefixing".

Some of the later enhancements to KERMIT include data compression, file attributes, sliding windows and long blocks (packets up to 1024 bytes in length). The sliding window adds the full duplex mode to the protocol. This full duplex mode means that KERMIT can send a continuous stream of data while receiving the responses at the same time. PROCOMM PLUS supports these features and is backward compatible with earlier versions.

PROCOMM PLUS also supports four of the KERMIT server commands for operating the remote KERMIT in the server mode; GET, SEND, LOGOUT, and FINISH. GET (receive) and SEND (transmit) will prompt you for the filename and then execute the function. LOGOUT will terminate the session and log you off the remote. FINISH will terminate the KERMIT session and return you to the system level.

PROCOMM PLUS' default KERMIT settings are fairly standard and should be changed only under special conditions. You may want to contact the system administrator of the particular host system you will be using for specific settings.

More information on KERMIT is available from Columbia University. Write:

Kermit Distribution
Columbia University Center for Computing Activities
612 West 115th Street
New York, NY 10025

## ASCII

ASCII stands for American Standard Code for Information Interchange. It consists of 128, 7 bit codes (0 - 127) that represent the upper and lower case alphabet, numbers, standard keyboard characters, and some specific control characters. Many computers implement an "8-bit" set (128-255) but these upper 128 characters may differ from system to system. By definition, the lower 128 are always the same.

ASCII transfer is just marginally a protocol; it has no error checking and only a minimum "handshaking" capability. The handshaking used is called XON/XOFF (ASCII decimal codes 17 and 19, or ^Q/^S). For this flow control to work, both the transmitter and receiver must have XON/XOFF enabled. When the sending system receives a ^S from the receiver it stops sending until the receiver transmits a ^Q.

Only plain text files should be transmitted with this protocol, since they generally will not contain 8-bit characters. You may use the even parity, 7 data bits, and 1 stop bit communications parameters (E-7-1) with ASCII.

*Note In addition to the XON/XOFF handshaking, you can implement other forms of handshaking using character pacing, line pacing and the pace character. For more information, see "ASCII Protocol Options" in Chapter 8.*

## *RASCII*

RASCII is a variant of ASCII. RASCII, however, performs no translation, filtering or flow control on the data being sent or received.

Many of the Setup options that control ASCII will not apply to RASCII; while *sending* a file with RASCII, only Local Echo, Line Pacing, Pace Character and Character Pacing still apply. While receiving a file with RASCII, all Setup options are valid—however, the Terminal mode Translate Table is disabled.

PROCOMM PLUS does **not** strip the 8th bit or perform any CR/LF manipulation during any RASCII transfer.

*Note RASCII is especially useful to those users requiring completely "transparent" or "passthru" transfer of text files.*

## *1K-XMODEM*

1K-XMODEM is essentially CRC XMODEM with 1024 byte (1K) packets. 1K-XMODEM is a single file protocol.

## *YMODEM*

YMODEM is the same as 1K-XMODEM except that it allows multiple files to be sent in one transfer (commonly referred to as "batch" mode). Filenames can be unique or contain the standard global filename variables * and ?.

YMODEM starts with its first packet labeled #0 instead of #1; this packet contains the filename and size for the file being transferred. After the last actual file is transmitted, YMODEM sends another packet #0 with a blank filename to tell the receiver that the transmission is complete.

## MODEM7

MODEM7 is used primarily on microcomputers using the CP/M operating system. It is a multiple file, block oriented protocol that sends a header before each file. This header information includes the filename but does not include the file size, date, time or attributes. PROCOMM PLUS supports both the CRC and checksum error detection modes of MODEM7.

This protocol is particularly useful for file transfers with older bulletin boards and computers using CP/M.

## TELINK

TELINK, developed by Tom Jennings, is another variant of XMODEM. This protocol is similar to MODEM7 but adds the file size and creation date information to the filename header; it also allows multiple file transmission.

TELINK is popular on FIDO bulletin board systems.

## ZMODEM

ZMODEM, created by Chuck Forsberg, is an efficient multiple-file protocol popular on many bulletin boards. It features auto downloading, and sends the filename, size and creation date information for each file. ZMODEM varies the size of each block to allow for noisy telephone lines, and an interrupted file transfer can be restarted. Both 16- and 32-bit CRC error checking are available.

## WXMODEM

WXMODEM is a variant of XMODEM developed by Peter Boswell. It is a full duplex, sliding window protocol that allows the transmission of up to four XMODEM blocks before requiring an acknowledgement from the receiver. WXMODEM is especially useful over data networks like Tymnet, Telenet or Datapac because it is fully capable of handling network flow control and because the full duplex sliding window feature reduces the turn-around delays.

## *SEALINK*

SEALINK is a sliding window variant of XMODEM. It was developed by Thom Henderson of System Enhancement Associates, Inc. to overcome the transmission delays caused by satellite relays or packet switched networks.

It is a full duplex, block-oriented protocol that can send up to six 128 byte blocks before requiring an acknowledgement from the receiver.

## *COMPUSERVE B*

This protocol is for use with the CompuServe B, Compuserve Quick B and CompuServe B+ protocols available on the CompuServe Information Service.

You can select it for the file transfer when you upload or download a file, just as you would any other protocol. Additionally, you can select it automatically by setting ENQ to CIS B in the Setup facility (see "Enquiry (ENQ)" in Chapter 8).

## *1K-XMODEM-G*

1K-XMODEM-G is a variant of 1K-XMODEM. The difference is that 1K-XMODEM-G does not provide software error detection or recovery, but expects the hardware to provide this service. This is a streaming protocol that sends and receives 1K packets in a continuous stream until instructed to stop. The packet is constructed the same as 1K-XMODEM (except that the two CRC bytes at the end of each packet are ignored).

*Note This protocol does not provide any software error detection or recovery. It is specifically for use with error-correcting modems.*

## *YMODEM-G*

YMODEM-G is a variant of YMODEM; the difference is that YMODEM-G does not provide software error detection or recovery, but expects the hardware to provide this service. It allows multiple files to be sent in one transfer.

*Note This protocol does not provide any software error detection or recovery. It is specifically for use with error-correcting modems.*

## IMODEM

Developed by John Friel, IMODEM has no software error detection or recovery capabilities, and is considered a streaming protocol.

*Note This protocol is specifically for use with high-speed error-correcting modems.*

## External 1, 2, 3

PROCOMM PLUS lets you use any of three external protocols for uploading and three for downloading. You can specify these protocols using the Setup facility—see Chapter 8.

For example, to specify a hypothetical external protocol called XFER as external protocol 1, you might specify a program called XFER-U for the External upload protocol 1 name and a program called XFER-D for the External download protocol 1 name. The protocol TYPE would be set at PROGRAM.

The XFER-U and XFER-D "programs" are actually the names of batch files (XFER-U.BAT and XFER-D.BAT). It is often convenient to use DOS batch files when specifying external protocols; for example, the actual program used to perform XFER uploads and downloads might be called XFER.EXE. XFER accepts numerous command options, most of which do not change between uses. By using a batch file, you spare yourself the trouble of entering the necessary options each time you perform a XFER transfer.

The XFER-D batch file might consist of the following line:

```
XFER rec
```

This command calls XFER and tells it to receive a file (rec). Since the filename is passed from the sending system in XFER transfers, you won't need to specify any parameters when PROCOMM PLUS prompts you after you select this protocol; just press [Enter] to begin transferring the file.

The XFER-U batch file consists of the following line:

```
XFER send %1
```

In this case, you would have to let XFER know which file to upload; you can do this by specifying the name of the file to upload when PROCOMM PLUS prompts you for XFER-U parameters. Whatever you enter would be passed to XFER-U.BAT when it is called, and the filename is passed to XFER via the %1 batch-file variable.

The two batch files and XFER.EXE would be placed either in the current directory or in a directory specified in the DOS path.

You can use similar techniques for specifying other programs to perform file transfers using external protocols.

PROCOMM PLUS also allows you to use protocols written in ASPECT and protocols specially-written to HOOK in to PROCOMM PLUS. For more information on these methods, see the discussion of them in the Chapter 7 *Meta Key* description.

## *Summary*

| Protocol | Batch | File Name | File Size | Date | Block Size | Error Check | Duplex Mode |
|---|---|---|---|---|---|---|---|
| ASCII | No | No | No | No | N/A | None | NA |
| RASCII | No | No | No | No | N/A | None | NA |
| CIS B | No | Yes | Yes | No | 512 | CRC | H |
| KERMIT | Yes | Yes | Yes | Yes | 1024 max | CRC/CS | H/F |
| IMODEM | No | Yes | No | No | 128 | None | H |
| MODEM7 | Yes | Yes | No | No | 128 | CRC/CS | H |
| SEALINK | Yes | Yes | Yes | No | 128 | CRC | F |
| TELINK | Yes | Yes | Yes | Yes | 128 | CRC/CS | H |
| ZMODEM | Yes | Yes | Yes | Yes | 128/1024 | CRC | F |
| WXMODEM | No | No | No | No | 128 | CRC | F |
| XMODEM | No | No | No | No | 128 | CRC/CS | H |
| 1KXMODEM | No | No | No | No | 128/1024 | CRC | H |
| YMODEM | Yes | Yes | Yes | No | 128/1024 | CRC | H |
| 1KXMODEM-G | No | No | No | No | 128/1024 | None | H |
| YMODEM-G | Yes | Yes | Yes | No | 128/1024 | None | H |

APPENDIX

# C

# Common Questions


General Problems ..... 236

Dialing Problems ..... 241

Problems with Host Mode ..... 242

Problems When Running an External Program ..... 243

Problems with Terminal Emulation ..... 245

Checking for Software Conflicts ..... 247

This appendix contains answers to questions about problems that may arise while you're using PROCOMM PLUS.

*Note Before you look through this appendix for a solution to your problem, look over the suggestions in the steps under "If You Have a Problem" in Chapter 1.*

## General Problems

- *The PROCOMM PLUS Hang Up command (Alt-H) doesn't work.*

  The Hangup command in the Setup facility must be set to a string that will get your modem's attention and tell it to hang up. The most common problem is that the string doesn't allow enough time for the modem to "wake up." This can be remedied by increasing the number of pause characters in the hangup string (the pause character is normally the tilde: ~). The other main reason why the hangup command fails is that the escape character or hangup command is invalid. The modem's escape code character (most modems use the plus sign by default) can be set in register S2 for Hayes-compatible modems. The hangup command is ATH0 for Hayes-compatible modems (if your modem isn't fully Hayes-compatible, you will need to find out from your modem manual what the correct commands are).

- *The PROCOMM PLUS Hang Up command (Alt-H) works, but slowly.*

  This is probably caused by the DTR line on your modem being forced high. You can change this with DIP-switch settings or (if your modem uses them) with software commands. For Hayes-compatible modems, the software command to make DTR follow the actual state of the line rather than being forced high is &D2. You can put this in the modem initialization command (see the paragraph beginning "Initialization command" under "Modem General Options" in Chapter 8. An alternative, if your modem accepts the &W command, is to type *AT &C1 &D2 &W* (in Terminal mode) and press Enter. The &C1 tells your modem to follow the true state of the line with regards to CD, the &D2 does the same for DTR, and the &W writes this information to the modem's non-volatile memory. For more information about using the &W command, see your modem's manual.

- *I sometimes have trouble opening files for logging or downloading. That is, sometimes the download or log features don't seem to work.*

  You may need to increase the FILES= parameter in your CONFIG.SYS file. We suggest using at least FILES=20. Consult your DOS manual for more details.

- *Sometimes, when I'm bringing up one of PROCOMM PLUS' functions, I get a screen allocation error. And, when I'm done with the function, the stuff that was on my screen is erased and PROCOMM PLUS says it can't restore it.*

  Either you don't have enough memory free or your memory has been corrupted (by some program). When PROCOMM PLUS asks DOS for memory to save the screen, the operating system is responding that the memory is unavailable. Make sure your system meets PROCOMM PLUS' minimum memory requirement. If you have enough RAM, then eliminate any software resident in memory (by rebooting your system) and see if the problem persists. If the problem goes away, you know one of your TSRs is "ill behaved" and you must then eliminate the culprit by trial and error.

- *When I try to use the DOS gateway it says "Command processor not found." What does this mean?*

  See "Problems When Running an External Program" later in this appendix.

- *When I call online systems like CompuServe, I get nothing but garbage characters on my screen.*

  When using public networks such as Telenet or Tymnet, you must either call in at E/7/1 (even parity, 7 data and 1 stop bits) or strip the high bit off each incoming character using the translation table.

- *I'm trying to get two computers running PROCOMM PLUS to talk to each other using a direct connection. What do I do?*

  The two machines should be using a null modem cable (see Appendix F). Make sure that each side is using the same line settings; you should be able to talk between the machines while in Terminal or Chat modes. You may even run Host Mode on one machine; just remember to set the Connection Type option in the Host Setup to DIRECT. The Abort xfer if CD lost Setup option should also be set to NO to allow file transfers.

- *PROCOMM PLUS doesn't work with the "absolutely-fully-100%-Hayes-compatible-whiz-bang" modem that I bought at a garage sale in Taiwan. Why not?*

  PROCOMM PLUS, by default, is set for use with Hayes-compatible modems. If your modem is not truly Hayes-compatible, you will have to change some of the Setup Options, especially the MODEM INITIALIZATION string and the MODEM DIAL command, to values correct for your modem. This may entail a little digging in your modem manual. User groups and local bulletin boards may be able to provide information on using your particular brand of modem.

- *When I download a file using a protocol like XMODEM, the file contains extra stuff at the end.*

  XMODEM (and its many variations) sends a file in blocks which are all of equal length. The last block sent will almost always contain ^Z pad characters which are added to fill out the block. A file will contain no extra characters only if it is an exact multiple of the block size.

- *I lose random characters when communicating with just about any other system. I cannot download files at all.*

  Some memory resident programs steal too much of the CPU to work with an asynchronous download. The offenders are often clock programs (which either display a clock onscreen or work with add-on system clocks). Certain screen blanking programs will also cause problems. Try rebooting your system without any of these programs or drivers installed and then execute PROCOMM PLUS (see "Checking for Software Conflicts" later in this appendix). The DOS supplied drivers ANSI and VDISK work fine, as do most popular commercial programs like SIDEKICK and SUPERKEY.

  Additional problems could be caused by disk caching into extended or expanded memory, or by RAM-disks above 640K. During disk caching the CPU disables interrupts, causing problems with devices using the interrupts while the cache is reading and writing to disk.

- *I can't download—I always get a message "File Creation Error."*

  If you have setup a default download directory, then make sure that the directory is valid. Make sure you have FILES=25 (or more) in your CONFIG.SYS. Make sure hidden or read-only files of the same name don't exist in the download directory.

- *I can't see text or highlighting that should appear on my monochrome monitor.*

  Exit to DOS and start PROCOMM PLUS with the /B option (see "Other Ways of Starting PROCOMM PLUS" in Chapter 1, "Getting Started"). This will start PROCOMM PLUS in black & white. If you can now see the text or highlighting that didn't appear before, change the screen colors in the Setup facility to suit you (see Chapter 8). Be sure to save the changes (so the /B option is no longer needed).

- *PROCOMM PLUS keeps resetting my baud rate to 300 when connecting to other systems (or when using Host mode).*

  This can be caused by any of the following:

  - Auto baud detect is on and result code messages are incorrect.
  - The X parameter in the initialization string is not correct, or (if it is) the modem result messages do not correspond to this "X" set or are incorrectly entered.
  - The initialization string is not getting sent to the modem, or the initialization string does not end in the correct dialing-command suffix.
  - The modem is not sending the proper messages. Check the Qn, Vn, and Xn parameters; some modems may also have switches to control how the modem sends messages.

  For more information, see "Modem General Options" and "Modem Result Messages" in Chapter 8, "Customizing PROCOMM PLUS."

- *How can I switch from voice to data on the same phone call?*

  If your modem is Hayes-compatible and does not have a physical switch for alternating between voice and data modes, you might still be able to do this with software commands:

  **Voice to data:** One party types *ATA* (in Terminal mode) and the other types *ATO*. Then both parties press [Enter] and hang up their handsets.

  **Data to voice:** While on-line, both parties pick up their phones and one party gives the Hang Up command [Alt]-[H]. This forces the modem back to its command state and enables voice communication.

- *When I start* PROCOMM PLUS, *the Status line indicates* ON-LINE, even though I'm not connected to another computer.

  This is probably caused by the CD switch or software setting of your modem being forced high rather than following the true state of the line. On many modems this can be changed with a DIP switch, but if your modem does not have switches you will need to send software commands to your modem. If it is a Hayes-compatible modem, try typing *AT &C1 &D2 &W* (in Terminal mode), then pressing [Enter]. The &C1 tells your modem to follow the true state of the line with regards to CD, the &D2 does the same for DTR, and the &W writes this information to the modem's non-volatile memory.

- *The redisplay buffer is displaying lines double-spaced.*

  The host system is sending other than the standard CR/LF or PROCOMM PLUS is setup to translate the incoming CR/LF into something non-standard. You can test this by doing an ASCII download with no translations turned on (see "ASCII Transfer Options" in Chapter 8). If the other side is sending a non-standard LF, you can convert it into a standard CR/LF (see Chapter 8). If the other side is sending the usual CR/LF, then turn off Terminal-mode CR translation.

# *Dialing Problems*

- *PROCOMM PLUS isn't dialing my modem.*

  First, make sure there is a path between PROCOMM PLUS and your modem:

  - Verify that you have correctly specified the COM port (see "Changing Line and Port Settings" in Chapter 8) and that the specifications for the base address and interrupt line are correct (see "Modem Port Assignments" in Chapter 8).
  - Verify that your cable and modem are functioning properly: in Terminal Mode, type *AT*, then press [Enter]; if you see a response (usually **OK**), then there is a path between PROCOMM PLUS and your modem.

  Second, make sure you are giving a valid instruction to your modem:

  - Verify that your modem dialing command and dialing command suffix are correct for your modem (see "Dialing command" and "Dialing command suffix" in Chapter 8).
  - Make sure that the dialing command contains a T if your telephone line uses tone dialing or a P if it uses pulse dialing.
  - Make sure that you haven't made a typographical error entering the telephone number and that you aren't sending too many characters for your modem's buffer (check your modem's manual to find out the capacity of your modem's buffer).

  Third, make sure your modem is properly connected to the telephone line and that it is ready to dial.

- *PROCOMM PLUS' dialing facility (or the DIAL script command) will dial a number ok but it doesn't realize when it has made a connection. PROCOMM PLUS times out, disconnects, and begins to redial the number.*

  Make sure that PROCOMM PLUS' modem result messages are set up correctly. The connect messages (for available baud rates) must be set to the string returned by the modem when it connects at that particular baud rate. To find out what your modem is returning, dial the number manually from terminal mode and examine the modem's response. If the modem isn't returning anything make sure a connection actually exists. If there is a connection, the modem needs to be configured to return responses.

Another possibility is that the wait-for-connection time is too small. You can change this for the current session (see "To change the wait-for-connection time" in Chapter 6), or you can change this permanently (see "Wait for connection" in Chapter 8).

- *Sometimes, when I dial a number from the dialing directory,* PROCOMM PLUS *will disconnect immediately after I get a connection and begin a redial.*

  First, check to see if you have a script file linked to the dialing directory entry; if so, make sure you don't execute a DIAL command within the linked script file (use IF NOT FROMDDIR).

  Another less frequent cause is a timeout just as the connection is being established; either the modem or PROCOMM PLUS could be timing-out and aborting the dial. PROCOMM PLUS' timeout period can be changed by pressing the End key while dialing or by changing the modem setup "wait for connection." The modem wait for timeout is probably set by a register (S7 for Hayes-compatible modems).

## Problems with Host Mode

- *When I try to run Host Mode it always thinks that somebody is online (either it goes to the "First Name" prompt, or it asks whether I want to hang up the line).*

  First, make sure you the connection type is not set to DIRECT. Then, make sure your modem is set so that it does not force carrier detect (CD) high or true. This is usually controlled by a DIP switch on your modem. For example, on a Hayes external modem you would set DIP switch 6 to the UP position. If your modem does not have DIP switches, use the appropriate software command (which for a Hayes-compatible modem is &C1). You can put this in the modem initialization command (see "Initialization command" in Chapter 8). Alternately, if your modem accepts the &W command, type *AT &C1 &D2 &W* (in Terminal mode) and press [Enter]. The &C1 tells your modem to follow the true state of the line with regards to CD, the &D2 does the same for DTR and the &W writes this information to the modem's non-volatile memory. For more information about using the &W command, see your modem's manual.

- *How can I get PROCOMM PLUS to come up automatically in Host mode at a particular time?*

  Create a script file containing the commands SUSPEND UNTIL and HOST, then run the script. Script execution is suspended until the correct time.

- *The remote user receives no Host-mode Welcome message, although the message appears properly set-up in the Setup facility.*

  This can result if the modem connected to the host computer is sluggish. If so, it reports CD high before the connection is correctly established. The welcome message is sent out as soon as CD is reported high and auto baud detect is finished. To correct this, add several of the pause character (normally the tilde, ~) to the Host-mode welcome message:

  *~~~~Welcome to Host Mode!*

## *Problems When Running an External Program*

PROCOMM PLUS attempts to execute an external program when you:

- Use the DOS Gateway ([Alt]-[F4], described in Chapter 7). PROCOMM PLUS attempts to execute COMMAND.COM.
- Use the Editor command ([Alt]-[A], described in Chapter 7). PROCOMM PLUS attempts to execute COMMAND.COM, then the program you've specified using the Setup facility (see "File/Path Options" in Chapter 8).
- Use the View a File command ([Alt]-[V], described in Chapter 7) if an external view utility is specified. PROCOMM PLUS attempts to execute COMMAND.COM, then the program you've specified using the Setup facility (see "File/Path Options" in Chapter 8).
- Use a Meta key (described in Chapter 7) if you specify a HOOK, PROGRAM or ASPECT type. PROCOMM PLUS attempts to execute COMMAND.COM, then the program or script you've specified in the Meta key facility (see Chapter 7).
- Use an external protocol, CISB protocol or KERMIT protocol for uploading or downloading ([PgUp] or [PgDn], described in Chapter 7). PROCOMM PLUS attempts to execute COMMAND.COM, then the program you've specified using the Setup facility (see "External Protocol Options" in Chapter 8).
- Use the On-line Help facility ([Alt]-[Z], described in Chapter 7). PROCOMM PLUS attempts to execute COMMAND.COM, then the help file.

- Use the Dialing Directory Jot function (described in Chapter 2). PROCOMM PLUS attempts to execute COMMAND.COM, then your editor.
- Use the Setup facility (Alt-S, described in Chapter 8). PROCOMM PLUS attempts to execute COMMAND.COM, then PCSETUP.EXE.
- Use the keyboard mapping facility (Alt-F8, described in Chapter 8). PROCOMM PLUS attempts to execute COMMAND.COM, then PCKEYMAP.EXE.
- Use the Shell command in Host mode (described in Chapter 9, "Using Host Mode"). PROCOMM PLUS attempts to execute COMMAND.COM.
- Use the automatic script compile mode (as used by Alt-F5, Meta keys (described in Chapter 7) or the /F startup option (described in Chapter 1). PROCOMM PLUS attempts to execute COMMAND.COM, then the help file.
- Use the following ASPECT commands: **DOS, SHELL, RUN, HOOK, KERMSERVE, EXECUTE** (when you execute a script that hasn't been compiled), **GETFILE** or **SENDFILE** (with KERMIT, CISB or an external protocol). Additionally, any float variables used in an ASPECT script will cause external execution.

If PROCOMM PLUS cannot run the required external program, it displays an error message consisting of EXTERNAL PROGRAM ERROR followed by one of the following:

- **EXTERNAL PROGRAM ERROR: File or path not found.** If you're using a hard-disk system, make sure COMMAND.COM is in the directory from which you started your computer (typically the root directory of drive C). If you're using a floppy system, make sure COMMAND.COM is in the root directory of the disk in drive A.

  If PROCOMM PLUS has attempted to execute PCSETUP.EXE or PCKEYMAP.EXE, make sure it's in the directory specified by the SET PCPLUS= command in your AUTOEXEC.BAT file, or—if you have not specified such a directory—in the current directory.

  If PROCOMM PLUS has attempted to execute another external program after executing COMMAND.COM, make sure that either the program is in the directory specified in the Setup facility (if you can specify one there), in the current directory, or in a directory specified using the PATH command in your AUTOEXEC.BAT file.

- **EXTERNAL PROGRAM ERROR: Argument list or environment too big.** The argument list for the program exceeds 128 bytes or the space required for environment exceeds 32K.
- **EXTERNAL PROGRAM ERROR: File not executable.** The external program is not executable or has an invalid executable file format.
- **EXTERNAL PROGRAM ERROR: Not enough memory available.** Not enough memory is available to execute the program, or the available memory has been corrupted.
- **EXTERNAL PROGRAM ERROR: Error unknown.** PROCOMM PLUS is unable to determine the cause of the error.

*Note When PROCOMM PLUS must load a secondary copy of the command processor (typically COMMAND.COM) for one of the commands described above, it uses the environment variable COMSPEC to determine the name and location of the command processor. COMSPEC is set at system startup to the drive, directory and program from which you started your computer. Problems can arise if you start your computer from a floppy disk in drive A and then insert a different disk in that drive. If you want to use one the commands that require executing COMMAND.COM, be sure that COMMAND.COM is where COMSPEC says it is (to find out what COMSPEC is set to, type SET at the DOS prompt).*

## *Problems with Terminal Emulation*

PROCOMM PLUS has the ability to act as a variety of popular terminals; this *emulation* of other machines is often a source of confusion. A terminal emulation must do two things: it must interpret data coming in the port as the actual terminal would interpret it, and it must send the codes that are available on the actual terminal.

Output processing, though less complex than input processing, is more visible to the user and therefore more important (assuming that the remote input is being processed correctly). When PROCOMM PLUS is emulating a terminal and you press a local key, the data transmitted depends on the key and its setup; for standard typewriter keys (like [A] to [Z], [0] to [9], etc.) the character sent equals the key character. However, for *special* keys (like [F1] to [F10] and the keypad keys), the transmitted data depends on how the emulation is set up. For details on setting up the emulations you'll be using, see "Changing the Keyboard Mapping" in Chapter 8.

Some common misunderstandings give rise to some of the following questions:

- *PROCOMM PLUS' emulation of the IBM 3101 uses function keys [F1] to [F8]. I use this emulation to talk to an IBM mainframe and I would like to use [F9] and [F10] on my PC keyboard also.*

  The IBM 3101 terminal has only eight function keys. The system may be using the 3101 to emulate a 3270. See the solution to the next problem.

- *I'm connecting to an IBM SYSTEM /370 that supports terminals with 24 function keys. I at least need to emulate [F9] to [F12].*

  Since you are probably dialing into a protocol converter, you will need to do some research. PROCOMM PLUS cannot emulate a key that isn't available but protocol converters come to the rescue. When you call a protocol converter, you must identify the terminal type that you are using from a list of supported terminals. The protocol converter takes all incoming codes and converts them to a single standard to send on to the actual system. Likewise, all signals coming from the actual system conform to a standard and must be altered by the protocol converter before being sent to you.

  For example, a very common protocol converter for IBM mainframes is the IBM 7171. This device allows a wide variety of terminals to emulate a 3270 type terminal. If you connect to the 7171 and identify yourself as a VT102, when you send a signal, the 7171 handles it as if it came from a VT102 and then converts it to a 3270 equivalent before passing it on to the mainframe. Similarly, when the mainframe sends something to be displayed, it sends the data to the 7171 (as if it were an IBM 3270). The 7171 then converts the mainframe's signals so that the VT102 will display the output properly.

When using PROCOMM PLUS in this type of situation, remember that a "double emulation" is occurring; therefore, to emulate a key that doesn't physically exist on the terminal being emulated, you must rely on the protocol converter (or front-end) to translate. For instance, to send the equivalent of the 3270's [PF12] to the IBM mainframe in our example, there is a problem: the VT102 doesn't have such a key! However, the 7171 protocol converter will take a special sequence (ESC,=) from the VT102, translate it into the 3270 code for [PF12] and send the signal to the mainframe. You may use the KEYMAP facility to assign that sequence to one of PROCOMM PLUS' keys.

*Note If you're using a 7171 or other protocol converter,* PROCOMM PLUS *has a built-in emulation to handle the situation—the 3270/950 emulation. Identify your terminal to the protocol converter as a Televideo 950.*

- *Under the VT100, VT102, IBM3101 emulations, the left-arrow key moves the cursor one space to the left and deletes the character on the screen. Data being edited is not actually destroyed.*

The host system is probably returning a backspace character, instead of a left-arrow escape sequence, to PROCOMM PLUS. A workaround is to change the way PROCOMM PLUS processes incoming *backspaces* to non-destructive. But first, you will probably want to define the outgoing BACKSPACE to be destructive. Here are the steps (the order of the steps in this procedure is important, because pressing [Alt]-[F8] resets BS translation to the power-on default):

1. Use the Keyboard Mapping facility (press [Alt]-[F8]) and define BACKSPACE to send ^H DEL (enter a caret-H and a control-backspace); save your changes.
2. Use the Setup facility (press [Alt]-[S] and select TERMINAL OPTIONS) to set BS translation to NON-DESTRUCTIVE; don't forget to save your changes!

## *Checking for Software Conflicts*

Memory-resident programs and device drivers are often the source of problems. Here's how you can check to see whether a problem is due to conflicts with other software that may be started from your AUTOEXEC.BAT or CONFIG.SYS files.

- Change the default drive to the drive from which you start your computer.
  - If you're using a floppy drive system, insert your DOS disk into drive A, type *A:* and press [Enter].
  - If you're using a hard drive system, type C:, press [Enter], type *cd* and press [Enter] again.
- Rename your AUTOEXEC.BAT file by typing

  *RENAME AUTOEXEC.BAT AUTOEXEC.SAV*

  and pressing [Enter].

- Display the contents of your CONFIG.SYS file by typing

  *TYPE CONFIG.SYS*

  and pressing [Enter].

- If your computer responds with the message "File not found," create a CONFIG.SYS file that contains a BUFFERS= command and a FILES= command as described under "Setting Up Your Computer" in Chapter 1.

- If there is any line in your CONFIG.SYS file that starts with DEVICE= (other than DEVICE=ANSI.SYS or DEVICE=VDISK.SYS), save your CONFIG.SYS file by typing

  *COPY CONFIG.SYS CONFIG.SAV*

  and pressing [Enter], then delete those lines from the file.

  You can use your word processor to edit the file, but be sure to save the file as an ASCII text file.

- Restart your computer by holding down the [Ctrl] and [Alt] keys while you press [Del].

- If your computer asks you to enter the date and time, respond and press [Enter].

- If you're using a floppy-disk system, replace your DOS disk with the PROCOMM PLUS Program disk, type *pcplus*, then press [Enter].

- If you're using a hard-disk system, use DOS' CD command to change to the directory that contains the PCPLUS.EXE file, type *pcplus*, then press [Enter].

  The PCPLUS.EXE file is normally in the directory that's specified with the "SET PCPLUS=" command in your AUTOEXEC.BAT file. If you haven't specified a directory using "SET PCPLUS=", PCPLUS.EXE is in the directory from which you normally start PROCOMM PLUS.

- Repeat whatever you did that resulted in your problem.

  - If the problem no longer occurs, it's due to something in either your AUTOEXEC.BAT file or your CONFIG.SYS file.

  - If you still have the problem, it's not due to anything in your AUTOEXEC.BAT or CONFIG.SYS files.

To restore your original AUTOEXEC.BAT and CONFIG.SYS files:

- If you're using a floppy system, insert your DOS disk into drive A, type *A:* and press [Enter].
- If you're using a hard drive system, type *C:*, press [Enter], type *cd* and press [Enter] again.

■ Type

*RENAME AUTOEXEC.SAV AUTOEXEC.BAT*

and press [Enter].

■ Type

*COPY CONFIG.SAV CONFIG.SYS*

and press [Enter].

APPENDIX

# D

# Technical Information


Files Used by PROCOMM PLUS ..... 252

Translating Control Codes ..... 255

ASCII Table ..... 257

Editing Text ..... 258

Background Operation in Multitasking Environments ..... 259

# Files Used by PROCOMM PLUS

Listed below are the various files used by PROCOMM PLUS. To find details about a particular file, refer to the Index at the back of this manual.

| | |
|---|---|
| PCPLUS.EXE | The PROCOMM PLUS program. This file is created by PCINSTAL. |
| PCPLUS.PRM | Contains information specified with the Setup facility. If you use the PCINSTAL program to customize PROCOMM PLUS, PCINSTAL creates this file; if not, this file is created when you start PROCOMM PLUS. For more information, see the note following this list. |
| PCPLUS.DIR | Contains the default Dialing Directory (default filename). If you use the PCINSTAL program to customize PROCOMM PLUS, PCINSTAL creates this file; if not, this file is created when you start PROCOMM PLUS. For more information, see the note following this list. |
| PCPLUS.KEY | Contains the keyboard macros (default filename). This file is created when you start PROCOMM PLUS (for more information, see the note following this list). |
| PCPLUS.KBD | Contains the keyboard mapping for various terminal emulations. This file is created by PCINSTAL. |
| PCPLUS.XLT | Contains the translation table. This file is created when you start PROCOMM PLUS (for more information, see the note following this list). |
| PCSETUP.EXE | The Setup facility. This file is created by PCINSTAL. |
| PCKEYMAP.EXE | The keyboard-mapping facility. This file is created by PCINSTAL. |
| PCINSTAL.EXE | The PCINSTAL program. This file is supplied on your distribution diskettes. |
| PCMAIL.EXE | The PCMAIL program. This file is created by PCINSTAL. |

| | |
|---|---|
| **PCPLUS.FON** | Contains a log of all calls. This file is created when you make your first call through the Dialing Directory (if call logging is enabled; see "General Options" in Chapter 8). |
| **PCPLUS.HDR** | Contains headers for messages (mail) left by remote users or the SYSOP during Host operation. This file is created when you start Host mode (for more information, see "Where to Keep These Files" in Chapter 9). |
| **PCPLUS.HHP** | Contains help information (which you can edit) for a remote user during Host operation. This file is provided on the PROCOMM PLUS distribution diskettes. |
| **PCPLUS.HLP** | Contains help information that you access when you press [Alt]-[Z]. This file is created by PCINSTAL. |
| **PCPLUS.HST** | Contains a history of events during Host operation. This file is created when you start Host mode (for more information, see "Where to Keep These Files" in Chapter 9). |
| **PCPLUS.LOG** | Contains the log file (default filename). This file is created when you use the Log File On/Off command. |
| **PCPLUS.MSG** | Contains the messages (mail) left by remote users or the SYSOP during Host operation. This file is created when you start Host mode (for more information, see "Where to Keep These Files" in Chapter 9). |
| **PCPLUS.NWS** | Contains a message (which you can write) that will be seen by remote users when they log on to your system during Host operation. This file is neither provided with nor created by PROCOMM PLUS; you can create it using an editor or ASCII word processor. |
| **PCPLUS.NUF** | A message displayed to new users on their first call to Host. This message is displayed only once. |
| **PCPLUS.HDL** | The optional alternate Download file listing; used in Host to replace the default file listing. For more information, see Chapter 9. |

| | |
|---|---|
| **PCPLUS.HRM** | The optional alternate Main menu for limited and normal users; used in Host to replace the default Main menu. |
| **PCPLUS.HPM** | The optional alternate Main menu for privileged users; used in Host to replace the default Main menu. |
| **PCPLUS.HXM** | The optional alternate Protocol selection menu for all Host users; replaces the default protocol selection menu. |
| **PCPLUS.HMM** | The optional alternate Mail Read option menu for all Host users; replaces the default Mail Read option menu. |
| **PCPLUS.SCR** | Contains the screen snapshot (default filename). This file is created when you use the Screen Snapshot command. |
| **PCPLUS.ULD** | Contains information about files uploaded by remote users during Host operation. This file is created when the first remote user uploads a file (see Chapter 9). |
| **PCPLUS.USR** | Contains entries specifying each remote Host user's name, password, and privilege level. This file is provided on the PROCOMM PLUS distribution diskettes. |
| **PCEDIT.EXE** | The PROCOMM PLUS editor, PCEDIT. This file is created by PCINSTAL. |
| **KERMIT.RTE** | Contains data required during a KERMIT file transfer. This file is provided on the PROCOMM PLUS distribution diskettes. **PROCOMM PLUS must be able to locate KERMIT.RTE file for KERMIT file transfers to work.** |
| **CISB.RTE** | Contains data required during a COMPUSERVE B file transfer. This file is provided on the PROCOMM PLUS distribution diskettes. **PROCOMM PLUS must be able to locate CISB.RTE file for COMPUSERVE B file transfers to work.** |

*Note When you first start PROCOMM PLUS after installation, PCPLUS.KEY and PCPLUS.XLT are created in the PCPLUS directory. PCINSTAL creates PCPLUS.PRM and PCPLUS.DIR. When you start PROCOMM PLUS at later times, PROCOMM PLUS looks for these files first in the current directory; if they're not there, it searches in the directory specified with the "SET PCPLUS=" command in your AUTOEXEC.BAT file.*

# *Translating Control Codes*

In communications, there are a number of operations that are represented by "control codes". In PROCOMM PLUS, most control codes are represented by the character ^ (caret) followed by a letter. Control codes occur:

- **In data you send to a remote computer.** For example, in chapter 4 you created Meta keys that you could use when logging on to the DATASTORM BBS to send your first name and your last name. In these macros, you represented pressing [Enter]—what you normally would do at the end of the line if you were *not* using a Meta key—with the control code ^M (read as "Control-M"). PROCOMM PLUS translated (interpreted) this as a "carriage return".

  Control codes may also be useful in certain script-file commands.

- **In commands PROCOMM PLUS sends to the modem.** For example, the Modem Command Options group of parameters in the Setup facility includes the parameter for the dialing-command suffix. This is ^M for most Hayes-compatible modems (^M is translated as a carriage return, which is what most modems expect at the end of a dialing command).

  Other commands that typically include control codes are the modem initialization string, the hang-up command and the auto-answer command.

The way a control code is translated is determined by its position in the ASCII table, which you'll find under "ASCII Table" later in this appendix. The first column in the ASCII table shows the character that would follow the ^ character, and the fifth column shows the operation that control code translates to.

The control codes you'll use most often are:

| | |
|---|---|
| ^H | Backspace |
| ^J | Line feed |
| ^L | Form feed |
| ^M | Carriage return |
| ^[ | Escape character |

For example, if you want the data you're sending to a remote computer to continue at the beginning of the next line on the remote computer's screen, you would type *^M^J*.

Control codes are also useful for macros and script files that automate telecommunications operations with CompuServe and many BBS systems, which use control codes such as ^C, and ^K for aborting commands. If you're creating a script file that needs to do such an operation, you can include the appropriate control code in a script file TRANSMIT command.

There are three codes that aren't exactly control codes, but which function in a similar way. First, PROCOMM PLUS translates the pause character—which is normally a ~ (tilde)—into a half-second pause; you can specify a different character for the pause character (as described in Chapter 8). This code is used in both the modem hang-up command and the modem auto-answer command.

You should be aware of the difference between using the tilde (or whatever pause character you have specified) to pause *PROCOMM PLUS* and using the comma to have the *modem* pause (as in a dialing code):

- The tilde (or other character) causes PROCOMM PLUS to pause when sending characters to the modem. Such a pause is necessary, for example, in the modem hang-up and auto-answer commands.
- The comma forces your modem to delay when sending characters to the telephone line. For example, a comma is commonly included in a dialing code for dialing out through a PBX system, which requires a delay before getting the second dial tone.

Three caret characters (^^^) represent a single caret (ASCII 94) during string translation, while a null (ASCII 0) can be represented in a translated string with the characters ^@.

**Note** *In addition to the translation of control codes that's automatically done on "what goes out", there's another type of translation that PROCOMM PLUS can perform —on characters (any character, not just a control code) being received from another computer. For more information, see "Changing the Translation Table" in Chapter 8).*

# *ASCII Table*

| Ctrl | Dec | Hex | Char | Code | Dec | Hex | Char | Dec | Hex | Char | Dec | Hex | Char | Dec | Hex | Char | Dec | Hex | Char | Dec | Hex | Char | Dec | Hex | Char |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| @ | 0 | 00 | | NUL | 32 | 20 | | 64 | 40 | @ | 96 | 60 | ` | 128 | 80 | Ç | 160 | A0 | á | 192 | C0 | └ | 224 | E0 | ⌐ |
| A | 1 | 01 | ☺ | SOH | 33 | 21 | ! | 65 | 41 | A | 97 | 61 | a | 129 | 81 | ü | 161 | A1 | í | 193 | C1 | ┴ | 225 | E1 | β |
| B | 2 | 02 | ☻ | STX | 34 | 22 | " | 66 | 42 | B | 98 | 62 | b | 130 | 82 | é | 162 | A2 | ó | 194 | C2 | ┬ | 226 | E2 | Γ |
| C | 3 | 03 | ♥ | ETX | 35 | 23 | # | 67 | 43 | C | 99 | 63 | c | 131 | 83 | â | 163 | A3 | ú | 195 | C3 | ├ | 227 | E3 | π |
| D | 4 | 04 | ♦ | EOT | 36 | 24 | $ | 68 | 44 | D | 100 | 64 | d | 132 | 84 | ä | 164 | A4 | ñ | 196 | C4 | ─ | 228 | E4 | Σ |
| E | 5 | 05 | ♣ | ENQ | 37 | 25 | % | 69 | 45 | E | 101 | 65 | e | 133 | 85 | à | 165 | A5 | Ñ | 197 | C5 | ┼ | 229 | E5 | σ |
| F | 6 | 06 | ♠ | ACK | 38 | 26 | & | 70 | 46 | F | 102 | 66 | f | 134 | 86 | å | 166 | A6 | ª | 198 | C6 | ╞ | 230 | E6 | µ |
| G | 7 | 07 | • | BEL | 39 | 27 | ' | 71 | 47 | G | 103 | 67 | g | 135 | 87 | ç | 167 | A7 | º | 199 | C7 | ╟ | 231 | E7 | τ |
| H | 8 | 08 | ◘ | BS | 40 | 28 | ( | 72 | 48 | H | 104 | 68 | h | 136 | 88 | ê | 168 | A8 | ¿ | 200 | C8 | ╚ | 232 | E8 | Φ |
| I | 9 | 09 | ○ | HT | 41 | 29 | ) | 73 | 49 | I | 105 | 69 | i | 137 | 89 | ë | 169 | A9 | ⌐ | 201 | C9 | ╔ | 233 | E9 | Θ |
| J | 10 | 0A | ◙ | LF | 42 | 2A | * | 74 | 4A | J | 106 | 6A | j | 138 | 8A | è | 170 | AA | ¬ | 202 | CA | ╩ | 234 | EA | Ω |
| K | 11 | 0B | ♂ | VT | 43 | 2B | + | 75 | 4B | K | 107 | 6B | k | 139 | 8B | ï | 171 | AB | ½ | 203 | CB | ╦ | 235 | EB | δ |
| L | 12 | 0C | ♀ | FF | 44 | 2C | ' | 76 | 4C | L | 108 | 6C | l | 140 | 8C | î | 172 | AC | ¼ | 204 | CC | ╠ | 236 | EC | ∞ |
| M | 13 | 0D | ♪ | CR | 45 | 2D | - | 77 | 4D | M | 109 | 6D | m | 141 | 8D | ì | 173 | AD | ¡ | 205 | CD | ═ | 237 | ED | Ø |
| N | 14 | 0E | ♫ | SO | 46 | 2E | . | 78 | 4E | N | 110 | 6E | n | 142 | 8E | Ä | 174 | AE | « | 206 | CE | ╬ | 238 | EE | ∈ |
| O | 15 | 0F | ☼ | SI | 47 | 2F | / | 79 | 4F | O | 111 | 6F | o | 143 | 8F | Å | 175 | AF | » | 207 | CF | ╧ | 239 | EF | ∩ |
| P | 16 | 10 | ► | DLE | 48 | 30 | 0 | 80 | 50 | P | 112 | 70 | p | 144 | 90 | É | 176 | B0 | ░ | 208 | D0 | ╨ | 240 | F0 | ≡ |
| Q | 17 | 11 | ◄ | DC1 | 49 | 31 | 1 | 81 | 51 | Q | 113 | 71 | q | 145 | 91 | æ | 177 | B1 | ▒ | 209 | D1 | ╤ | 241 | F1 | ± |
| R | 18 | 12 | ↕ | DC2 | 50 | 32 | 2 | 82 | 52 | R | 114 | 72 | r | 146 | 92 | Æ | 178 | B2 | ▓ | 210 | D2 | ╥ | 242 | F2 | ≥ |
| S | 19 | 13 | !! | DC3 | 51 | 33 | 3 | 83 | 53 | S | 115 | 73 | s | 147 | 93 | ô | 179 | B3 | │ | 211 | D3 | ╙ | 243 | F3 | ≤ |
| T | 20 | 14 | ¶ | DC4 | 52 | 34 | 4 | 84 | 54 | T | 116 | 74 | t | 148 | 94 | ö | 180 | B4 | ┤ | 212 | D4 | ╘ | 244 | F4 | ⌠ |
| U | 21 | 15 | § | NAK | 53 | 35 | 5 | 85 | 55 | U | 117 | 75 | u | 149 | 95 | ò | 181 | B5 | ╡ | 213 | D5 | ╒ | 245 | F5 | ⌡ |
| V | 22 | 16 | ▬ | SYN | 54 | 36 | 6 | 86 | 56 | V | 118 | 76 | v | 150 | 96 | û | 182 | B6 | ╢ | 214 | D6 | ╓ | 246 | F6 | ÷ |
| W | 23 | 17 | ↨ | ETB | 55 | 37 | 7 | 87 | 57 | W | 119 | 77 | w | 151 | 97 | ù | 183 | B7 | ╖ | 215 | D7 | ╫ | 247 | F7 | ≈ |
| X | 24 | 18 | ↑ | CAN | 56 | 38 | 8 | 88 | 58 | X | 120 | 78 | x | 152 | 98 | ÿ | 184 | B8 | ╕ | 216 | D8 | ╪ | 248 | F8 | ° |
| Y | 25 | 19 | ↓ | EM | 57 | 39 | 9 | 89 | 59 | Y | 121 | 79 | y | 153 | 99 | Ö | 185 | B9 | ╣ | 217 | D9 | ┘ | 249 | F9 | • |
| Z | 26 | 1A | → | SUB | 58 | 3A | : | 90 | 5A | Z | 122 | 7A | z | 154 | 9A | Ü | 186 | BA | ║ | 218 | DA | ┌ | 250 | FA | · |
| [ | 27 | 1B | ← | ESC | 59 | 3B | ; | 91 | 5B | [ | 123 | 7B | { | 155 | 9B | ¢ | 187 | BB | ╗ | 219 | DB | █ | 251 | FB | √ |
| \ | 28 | 1C | ∟ | FS | 60 | 3C | < | 92 | 5C | \ | 124 | 7C | ¦ | 156 | 9C | £ | 188 | BC | ╝ | 220 | DC | ▄ | 252 | FC | ⁿ |
| ] | 29 | 1D | ↔ | GS | 61 | 3D | = | 93 | 5D | ] | 125 | 7D | } | 157 | 9D | ¥ | 189 | BD | ╜ | 221 | DD | ▌ | 253 | FD | ² |
| ^ | 30 | 1E | ▲ | RS | 62 | 3E | > | 94 | 5E | ^ | 126 | 7E | ~ | 158 | 9E | Pt | 190 | BE | ╛ | 222 | DE | ▐ | 254 | FE | ■ |
| _ | 31 | 1F | ▼ | US | 63 | 3F | ? | 95 | 5F | _ | 127 | 7F | ⌂ | 159 | 9F | ƒ | 191 | BF | ┐ | 223 | DF | ▀ | 255 | FF | |

# Editing Text

You can use these keys whenever you're editing a text entry (for example, in a Dialing Directory entry, in a Setup field, in a keyboard macro, or in a filename):

| To ... | Press ... |
|---|---|
| Move the cursor to the left | ← |
| Move the cursor to the right | → |
| Move the cursor to the beginning | Home |
| Move the cursor to the end | End |
| Switch between Insert and Overtype mode for entering characters | Ins |
| Delete the character at the cursor | Del |
| Delete the character to the left of the cursor | Backspace |
| Delete all characters | Ctrl-Backspace |
| Delete all characters from the cursor to the end | Ctrl-End |

# *Background Operation in Multitasking Environments*

PROCOMM PLUS has been designed to run smoothly and efficiently under a variety of multitasking environments (including Windows and DESQview). Running PROCOMM PLUS under one of these multitasking environments allows you to use more than one program at once; for instance, with enough memory you can transfer files in the background while continuing to work with your word processor or spreadsheet.

## DESQview

DESQview requires a Program Information File (a file with the extension .DVP) for each program it will run in a window. Since DESQview automatically creates the information file used PROCOMM PLUS (during the DESQview installation process), no additional work is required. However, you may always customize the operation of PROCOMM PLUS with these steps:

- If you want to run **PCEDIT** from within PROCOMM PLUS, use DESQview's *Change a Program* command to change the PROCOMM PLUS window size from 210K to 265K.
- If you want to run **PCKEYMAP, PCSETUP** and **PCEDIT** from their own DESQview windows, use DESQview's *Add a Program command* and choose **PCEDIT, PCSETUP** and **PCKEYMAP** . You can then use DESQview's Change a Program command to change the PROCOMM PLUS window size from 210K to 192K.

*Note If you change the current directory after starting PROCOMM PLUS (by pressing* [Alt]-[F7]*), you* must *start PROCOMM PLUS from a batch file that sets the PCPLUS environment variable (because an environment variable set in DOS before you start DESQview is not recognized within a DESQview window). Assuming you have stored the PROCOMM PLUS files in a directory called PCPLUS, this batch file should contain the following three lines:*

```
SET PCPLUS=C:\PCPLUS
PATH C:\PCPLUS
PCPLUS.EXE
```

*For more details on operating communications software within DESQview, please see your DESQview manual.*

## Windows

Microsoft Windows also requires a Program Information File (a file with the extension .PIF) for each program that is run in one of its windows.

Windows 3.0 automatically creates the information file used by PROCOMM PLUS (with the Windows Setup program). This should be sufficient for most users.

However, if you're running Windows in the 386 Enhanced mode, make sure PROCOMM PLUS is able to run in the background by setting the background box in the PROCOMM PLUS PIF file; this will prevent your session from being dropped if you run other applications in the foreground! Additionally, this setting allows you to upload or download files in the background.

*Note Depending on the speed of your machine, it may be necessary to increase the background priority in the PIF file for proper background operation.*

For best results, run PROCOMM PLUS in a window. PROCOMM PLUS can only be run in a window in the 386 Enhanced mode of Windows 3.0; if you're running in Real or Standard mode, the program will only run full screen.

*Note If you are running Windows in the 386 Enhanced mode and using non-standard COM-port settings, it will be necessary to make modifications to your SYSTEM.INI file. The settings follow the [386Enh] label; changes can be made using a text editor or the Windows Notepad program. These settings should match the Port Assignments in the PROCOMM PLUS Setup.*

*You should only make changes to the SYSTEM.INI if your settings are different from the Windows defaults! For the lines:*

*COM1Base=<port>*

*COM2Base=<port>*

*COM3Base=<port>*

*COM4Base=<port>*

*Windows default: COM1Base=3F8h; COM2Base=2F8h; COM3Base=2E8h; COM4Base=2E0h*

*Note that the Windows COM3 and COM4 addresses are not standard for most machines. For the lines:*

*COM1Irq=<number>*

*COM2Irq=<number>*

*COM3Irq=<number>*

*COM4Irq=<number>*

*Windows Default: COM1Irq=4, COM2Irq=3, COM3Irq=4, COM4Irq=3*

*Setting this value to -1 disables any input from this port. This may be necessary if there is a hardware conflict between ports.*

APPENDIX

# E

# Terminal Emulation


Overview ..... 264

TTY ..... 265

DEC VT52 ..... 265

DEC VT100/102/Wyse 75 ..... 266

DEC VT220/320/TeleVideo 922 ..... 267

Data General 100 ..... 268

Data General 200/210 ..... 269

ANSI X3.64 ..... 270

IBM PC ..... 271

TeleVideo 900 Series ..... 273

IBM 3101 ..... 274

IBM 3161 ..... 275

Lear Siegler ADM 3A/5 ..... 276

Lear Siegler ADM 31 ..... 276

Esprit 3 ..... 277

Heath/Zenith 19 ..... 278

ADDS 60/90 ..... 279

Wyse 50 ..... 280

Wyse 100 ..... 281

IBM 3270/950 ..... 282

AT&T 605 ..... 284

AT&T 4410 ..... 285

# Overview

PROCOMM PLUS emulates a number of popular terminals. This appendix lists the default key mappings supplied with PROCOMM PLUS; you can change them at any time by using the key mapping facility. To make changes, press Alt-F8 from within PROCOMM PLUS, or enter *PCKEYMAP* at the DOS prompt. All values listed in the TRANSMITTED CODES column are hexadecimal (base 16).

If you encounter any errors in these emulations or have any questions, please contact DATASTORM TECHNOLOGIES, INC.

*Note* *If you have a problem with terminal emulation, see "Problems with Terminal Emulation" in Appendix C.*

# *TTY*

TTY is a very simple emulation.

| PCPLUS KEYS | TTY FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Backspace | Backspace | 08 |

# *DEC VT52*

PROCOMM PLUS supports the standard model VT52 functions, including: full/half duplex, keypad application mode, cursor control, erase functions, printer-control functions and full display attributes.

| PCPLUS KEYS | VT 52 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Home | Home Cursor | 1B 48 |
| Cursor Up | Cursor Up | 1B 41 |
| Cursor Down | Cursor Down | 1B 42 |
| Cursor Left | Cursor Left | 1B 44 |
| Cursor Right | Cursor Right | 1B 43 |
| Ctrl-PgDn | Clear screen | 1B 48 1B 4A |
| End | Erase end of line | 1B 4B |
| Ctrl-PgUp | Delete Line | 1B 5B 4D |
| Ctrl-End | | 1B 4A |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Backspace | Character Delete | 7F |
| F7 | Keypad Application mode 1 | 1B 3F 71 |
| F8 | Keypad Application mode 2 | 1B 3F 72 |
| Shift-F7 | Keypad Application mode 3 | 1B 3F 73 |
| F5 | Keypad Application mode 4 | 1B 3F 74 |
| F6 | Keypad Application mode 5 | 1B 3F 75 |
| Shift-F5 | Keypad Application mode 6 | 1B 3F 76 |
| F3 | Keypad Application mode 7 | 1B 3F 77 |
| F4 | Keypad Application mode 8 | 1B 3F 78 |
| Shift-F3 | Keypad Application mode 9 | 1B 3F 79 |
| F9 or F10 | Keypad Application mode 0 | 1B 3F 70 |
| F1 | Program Function 1 (PF1) | 1B 50 |
| F2 | Program Function 2 (PF2) | 1B 51 |
| Shift-F1 | Program Function 3 (PF3) | 1B 52 |
| Shift-F2 | Program Function 4 (PF4) | 1B 53 |
| Shift-F4 | Keypad Application mode DASH | 1B 3F 6D |

| | | |
|---|---|---|
| Shift-F6 | Keypad Application mode COMMA | 1B 3F 6C |
| Shift-F9 | Keypad Application mode PERIOD | 1B 3F 6E |
| Shift-F8 or Shift-F10 | Keypad Application mode ENTER | 1B 3F 4D |

## DEC VT100/102 and Wyse 75

PROCOMM PLUS supports the standard VT102 functions, including: full/half duplex, set/reset modes, scroll region, special graphics character set, US & UK character sets, keypad application mode, cursor control, erase functions, insert/delete lines, full display attributes (with extensions for ANSI color graphics), programmable tabs and printer control functions. PROCOMM PLUS responds to the Ctrl-E (ENQ) enquiry function by sending the string stored for keyboard macro Alt-0. This "answerback message" is sent only if ENQ is enabled in the Setup facility (see "Terminal General Options" in Chapter 8). Num Lock must be active for keypad application mode functions.

| PCPLUS KEYS | FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Home | Home Cursor | 1B 5B 48 |
| Cursor Up | Cursor Up | 1B 5B 41 |
| Cursor Down | Cursor Down | 1B 5B 42 |
| Cursor Left | Cursor Left | 1B 5B 44 |
| Cursor Right | Cursor Right | 1B 5B 43 |
| Ctrl-PgDn | Clear screen | 1B 5B 48 1B 5B 32 4A |
| End | Erase end of line | 1B 5B 4B |
| Ctrl-Home | Insert Line | 1B 5B 4C |
| Ctrl-PgUp | Delete Line | 1B 5B 4D |
| Ctrl-J | Line Feed | 0A |
| Keypad 0 | Keypad Application mode 0 | 1B 4F 70 |
| Keypad 1 | Keypad Application mode 1 | 1B 4F 71 |
| Keypad 2 | Keypad Application mode 2 | 1B 4F 72 |
| Keypad 3 | Keypad Application mode 3 | 1B 4F 73 |
| Keypad 4 | Keypad Application mode 4 | 1B 4F 74 |
| Keypad 5 | Keypad Application mode 5 | 1B 4F 75 |
| Keypad 6 | Keypad Application mode 6 | 1B 4F 76 |
| Keypad 7 | Keypad Application mode 7 | 1B 4F 77 |
| Keypad 8 | Keypad Application mode 8 | 1B 4F 78 |
| Keypad 9 | Keypad Application mode 9 | 1B 4F 79 |
| F1 | Program Function 1 (PF1) | 1B 4F 50 |

| | | |
|---|---|---|
| F2 | Program Function 2 (PF2) | 1B 4F 51 |
| F3 | Program Function 3 (PF3) | 1B 4F 52 |
| F4 | Program Function 4 (PF4) | 1B 4F 53 |
| Keypad- | Keypad Application mode DASH | 1B 4F 6D |
| Keypad* | Keypad Application mode COMMA | 1B 4F 6C |
| Keypad. | Keypad Application mode PERIOD | 1B 4F 6E |
| Keypad+ | Keypad Application mode ENTER | 1B 4F 4D |

## *DEC VT220/320 and Televideo 922*

PROCOMM PLUS supports the standard DEC functions, including: full/half duplex, erase/insert/delete functions and cursor control.

| PCPLUS KEYS | FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Home | Insert Line | 1B 5B 4C |
| Ctrl-PgUp | Delete Line | 1B 5B 4D |
| Ctrl-PgDn | Clear screen | 1B 5B 48 1B 5B 32 4A |
| Ctrl-Backspace | Character Delete | 7F |
| Cursor Up | Cursor Up | 1B 5B 41 |
| Cursor Down | Cursor Down | 1B 5B 42 |
| Cursor Left | Cursor Left | 1B 5B 44 |
| Cursor Right | Cursor Right | 1B 5B 43 |
| Home | Home Cursor | 1B 5B 48 |
| End | Erase end of line | 1B 5B 4B |
| Keypad 0 | Keypad Application mode 0 | 1B 4F 70 |
| Keypad 1 | Keypad Application mode 1 | 1B 4F 71 |
| Keypad 2 | Keypad Application mode 2 | 1B 4F 72 |
| Keypad 3 | Keypad Application mode 3 | 1B 4F 73 |
| Keypad 4 | Keypad Application mode 4 | 1B 4F 74 |
| Keypad 5 | Keypad Application mode 5 | 1B 4F 75 |
| Keypad 6 | Keypad Application mode 6 | 1B 4F 76 |
| Keypad 7 | Keypad Application mode 7 | 1B 4F 77 |
| Keypad 8 | Keypad Application mode 8 | 1B 4F 78 |
| Keypad 9 | Keypad Application mode 9 | 1B 4F 79 |
| F1 | Program Function 1 (PF1) | 1B 4F 50 |
| F2 | Program Function 2 (PF2) | 1B 4F 51 |
| F3 | Program Function 3 (PF3) | 1B 4F 52 |

| | | |
|---|---|---|
| F4 | Program Function 4 (PF4) | 1B 4F 53 |
| F6 | Function Key F6 | 1B 5B 31 37 7E |
| F7 | Function Key F7 | 1B 5B 31 38 7E |
| F8 | Function Key F8 | 1B 5B 31 39 7E |
| F9 | Function Key F9 | 1B 5B 32 30 7E |
| F10 | Function Key F10 | 1B 5B 32 31 7E |
| F11 or Shift-F1 | Function Key F11 (ESC) | 1B 5B 32 33 7E |
| F12 or Shift-F2 | Function Key F12 (BS) | 1B 5B 32 34 7E |
| Shift-F3 | Function Key F13 (LF) | 1B 5B 32 35 7E |
| Shift-F4 | Function Key F14 | 1B 5B 32 36 7E |
| Shift-F5 | Function Key F15 (HELP) | 1B 5B 32 38 7E |
| Shift-F6 | Function Key F16 (DO) | 1B 5B 32 39 7E |
| Shift-F7 | Function Key F17 | 1B 5B 33 31 7E |
| Shift-F8 | Function Key F18 | 1B 5B 33 32 7E |
| Shift-F9 | Function Key F19 | 1B 5B 33 33 7E |
| Shift-F10 | Function Key F20 | 1B 5B 33 34 7E |
| Keypad- | Keypad Application mode DASH | 1B 4F 6D |
| Keypad* | Keypad Application mode COMMA | 1B 4F 6C |
| Keypad. | Keypad Application mode PERIOD | 1B 4F 6E |
| Keypad+ | Keypad Application mode ENTER | 1B 4F 4D |

# Data General 100

PROCOMM PLUS supports the standard Data General 100 functions.

| PCPLUS KEYS | DG 100 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Backspace | New Line | 0D |
| Home | Home Cursor | 08 |
| Cursor Up | Cursor Up | 17 |
| Cursor Down | Cursor Down | 1A |
| Cursor Left | Cursor Left | 19 |
| Cursor Right | Cursor Right | 18 |
| F1 | Function 1 (Cmd-1) | 1E 71 |
| F2 | Function 2 (Cmd-2) | 1E 72 |
| F3 | Function 3 (Cmd-3) | 1E 73 |
| F4 | Function 4 (Cmd-4) | 1E 74 |
| F5 | Function 5 (Cmd-5) | 1E 75 |
| F6 | Function 6 (Cmd-6) | 1E 76 |

| | | |
|---|---|---|
| F7 | Function 7 (Cmd-7) | 1E 77 |
| F8 | Function 8 (Cmd-8) | 1E 78 |
| F9 | Function 9 (Cmd-9) | 1E 79 |
| F10 | Function 10 (Cmd-10) | 1E 7A |
| Shift-F1 | Shift Function 1 (Cmd-Shift-1) | 1E 61 |
| Shift-F2 | Shift Function 2 (Cmd-Shift-2) | 1E 62 |
| Shift-F3 | Shift Function 3 (Cmd-Shift-3) | 1E 63 |
| Shift-F4 | Shift Function 4 (Cmd-Shift-4) | 1E 64 |
| Shift-F5 | Shift Function 5 (Cmd-Shift-5) | 1E 65 |
| Shift-F6 | Shift Function 6 (Cmd-Shift-6) | 1E 66 |
| Shift-F7 | Shift Function 7 (Cmd-Shift-7) | 1E 67 |
| Shift-F8 | Shift Function 8 (Cmd-Shift-8) | 1E 68 |
| Shift-F9 | Shift Function 9 (Cmd-Shift-9) | 1E 69 |
| Shift-F10 | Shift Function 10 (Cmd-Shift-10) | 1E 6A |

## *Data General 200/210*

PROCOMM PLUS supports the standard Data General 200 and 210 functions.

| PCPLUS KEYS | FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Backspace | New Line | 0D |
| Home | Home Cursor | 08 |
| Cursor Up | Cursor Up | 17 |
| Cursor Down | Cursor Down | 1A |
| Cursor Left | Cursor Left | 19 |
| Cursor Right | Cursor Right | 18 |
| F1 | Function 1 | 1E 71 |
| F2 | Function 2 | 1E 72 |
| F3 | Function 3 | 1E 73 |
| F4 | Function 4 | 1E 74 |
| F5 | Function 5 | 1E 75 |
| F6 | Function 6 | 1E 76 |
| F7 | Function 7 | 1E 77 |
| F8 | Function 8 | 1E 78 |
| F9 | Function 9 | 1E 79 |
| F10 | Function 10 | 1E 7A |
| F11 | Function 11 | 1E 7B |
| F12 | Function 12 | 1E 7C |
| Shift-F1 | Shift Function 1 | 1E 61 |
| Shift-F2 | Shift Function 2 | 1E 62 |
| Shift-F3 | Shift Function 3 | 1E 63 |

| | | |
|---|---|---|
| Shift-F4 | Shift Function 4 | 1E 64 |
| Shift-F5 | Shift Function 5 | 1E 65 |
| Shift-F6 | Shift Function 6 | 1E 66 |
| Shift-F7 | Shift Function 7 | 1E 67 |
| Shift-F8 | Shift Function 8 | 1E 68 |
| Shift-F9 | Shift Function 9 | 1E 69 |
| Shift-F10 | Shift Function 10 | 1E 6A |
| Shift-F11 | Shift Function 11 | 1E 6B |
| Shift-F12 | Shift Function 12 | 1E 6C |
| Ctrl-F1 | Control Function 1 | 1E 31 |
| Ctrl-F2 | Control Function 2 | 1E 32 |
| Ctrl-F3 | Control Function 3 | 1E 33 |
| Ctrl-F4 | Control Function 4 | 1E 34 |
| Ctrl-F5 | Control Function 5 | 1E 35 |
| Ctrl-F6 | Control Function 6 | 1E 36 |
| Ctrl-F7 | Control Function 7 | 1E 37 |
| Ctrl-F8 | Control Function 8 | 1E 38 |
| Ctrl-F9 | Control Function 9 | 1E 39 |
| Ctrl-F10 | Control Function 10 | 1E 3A |
| Ctrl-F11 | Control Function 11 | 1E 3B |
| Ctrl-F12 | Control Function 12 | 1E 3C |

# *ANSI X3.64*

This is the recommended emulation for use with bulletin board systems that use ANSI graphics and color. The ANSI emulation processes the codes given in the DOS technical reference manual, and behaves in the same manner as the DOS 3.x ANSI.SYS device driver. PROCOMM PLUS does not use the ANSI.SYS driver itself.

This emulation is similar to the VT102 emulation in function, but the VT102 emulation handles display attributes in a slightly different manner.

| PCPLUS KEYS | FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Home | Home Cursor | 1B 5B 48 |
| Cursor Up | Cursor Up | 1B 5B 41 |
| Cursor Down | Cursor Down | 1B 5B 42 |
| Cursor Left | Cursor Left | 1B 5B 44 |
| Cursor Right | Cursor Right | 1B 5B 43 |
| Ctrl-PgDn | Clear screen | 1B 5B 48 1B 5B 32 4A |
| End | Erase end of line | 1B 5B 4B |
| Ctrl-Home | Insert Line | 1B 5B 4C |

| | | |
|---|---|---|
| Ctrl-PgUp | Delete Line | 1B 5B 4D |
| Ctrl-J | Line Feed | 0A |
| F7 | Keypad Application mode 1 | 1B 4F 71 |
| F8 | Keypad Application mode 2 | 1B 4F 72 |
| Shift-F7 | Keypad Application mode 3 | 1B 4F 73 |
| F5 | Keypad Application mode 4 | 1B 4F 74 |
| F6 | Keypad Application mode 5 | 1B 4F 75 |
| Shift-F5 | Keypad Application mode 6 | 1B 4F 76 |
| F3 | Keypad Application mode 7 | 1B 4F 77 |
| F4 | Keypad Application mode 8 | 1B 4F 78 |
| Shift-F3 | Keypad Application mode 9 | 1B 4F 79 |
| F9 | Keypad Application mode 0 | 1B 4F 70 |
| F10 | Keypad Application mode 0 | 1B 4F 70 |
| F1 | Program Function 1 (PF1) | 1B 4F 50 |
| F2 | Program Function 2 (PF2) | 1B 4F 51 |
| Shift-F1 | Program Function 3 (PF3) | 1B 4F 52 |
| Shift-F2 | Program Function 4 (PF4) | 1B 4F 53 |
| Shift-F4 | Keypad Application mode DASH | 1B 4F 6D |
| Shift-F6 | Keypad Application mode COMMA | 1B 4F 6C |
| Shift-F9 | Keypad Application mode PERIOD | 1B 4F 6E |
| Shift-F8 | Keypad Application mode ENTER | 1B 4F 4D |
| Shift-F10 | Keypad Application mode ENTER | 1B 4F 4D |

# *IBM PC*

This emulation allows those using a remote PC host "doorway" program to simulate the actual key codes generated by the keyboard.

| PCPLUS KEYS | FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Backtab | | 00 0F |
| Insert | Insert Mode | 00 52 |
| Delete | Character Delete | 00 53 |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Home | Control Home | 00 77 |
| Ctrl-End | Control End | 00 75 |
| Ctrl-PgUp | Control Page Up | 00 84 |
| Ctrl-PgDn | Control Page Down | 00 76 |

| | | |
|---|---|---|
| Ctrl-Backspace | Control Backspace | E0 7F |
| Gray Cursor Up | Gray Cursor Up | E0 48 |
| Gray Cursor Down | Gray Cursor Down | E0 50 |
| Gray Cursor Left | Gray Cursor Left | E0 4B |
| Gray Cursor Right | Gray Cursor Right | E0 4D |
| Gray Insert | Gray Insert | E0 52 |
| Gray Delete | Gray Delete | E0 53 |
| Gray Home | Gray Home | E0 47 |
| Gray End | Gray End | E0 4F |
| Gray PgUp | Gray Page Up | E0 49 |
| Gray PgDn | Gray Page Down | E0 51 |
| Cursor Up | Cursor Up | 00 48 |
| Cursor Down | Cursor Down | 00 50 |
| Cursor Left | Cursor Left | 00 4B |
| Cursor Right | Cursor Right | 00 4D |
| Home | Home Cursor | 00 47 |
| End | End | 00 4F |
| F1 | Program Function 1 (F1) | 00 3B |
| F2 | Program Function 2 (F2) | 00 3C |
| F3 | Program Function 3 (F3) | 00 3D |
| F4 | Program Function 4 (F4) | 00 3E |
| F5 | Program Function 5 (F5) | 00 3F |
| F6 | Program Function 6 (F6) | 00 40 |
| F7 | Program Function 7 (F7) | 00 41 |
| F8 | Program Function 8 (F8) | 00 42 |
| F9 | Program Function 9 (F9) | 00 43 |
| F10 | Program Function 10 (F10) | 00 44 |
| F11 | Program Function 11 (F11) | 00 85 |
| F12 | Program Function 12 (F12) | 00 86 |
| Shift-F1 | Shift Program Function 1 (SF1) | 00 54 |
| Shift-F2 | Shift Program Function 2 (SF2) | 00 55 |
| Shift-F3 | Shift Program Function 3 (SF3) | 00 56 |
| Shift-F4 | Shift Program Function 4 (SF4) | 00 57 |
| Shift-F5 | Shift Program Function 5 (SF5) | 00 58 |
| Shift-F6 | Shift Program Function 6 (SF6) | 00 59 |
| Shift-F7 | Shift Program Function 7 (SF7) | 00 5A |
| Shift-F8 | Shift Program Function 8 (SF8) | 00 5B |
| Shift-F9 | Shift Program Function 9 (SF9) | 00 5C |
| Shift-F10 | Shift Program Function 10 (SF10) | 00 5D |
| Shift-F11 | Shift Program Function 11 (SF11) | 00 87 |
| Shift-F12 | Shift Program Function 12 (SF12) | 00 88 |
| Ctrl-F1 | Control Program Function 1 (CF1) | 00 1E |
| Ctrl-F2 | Control Program Function 2 (CF2) | 00 5F |
| Ctrl-F3 | Control Program Function 3 (CF3) | 00 60 |
| Ctrl-F4 | Control Program Function 4 (CF4) | 00 61 |

| | | |
|---|---|---|
| Ctrl-F5 | Control Program Function 5 (CF5) | 00 62 |
| Ctrl-F6 | Control Program Function 6 (CF6) | 00 63 |
| Ctrl-F7 | Control Program Function 7 (CF7) | 00 64 |
| Ctrl-F8 | Control Program Function 8 (CF8) | 00 65 |
| Ctrl-F9 | Control Program Function 9 (CF9) | 00 66 |
| Ctrl-F10 | Control Program Function 10 (CF10) | 00 67 |
| Ctrl-F11 | Control Program Function 11 (CF11) | 00 89 |
| Ctrl-F12 | Control Program Function 12 (CF12) | 00 8A |

## *TeleVideo 900 Series*

PROCOMM PLUS supports the standard TeleVideo 900 series functions, including: full/half duplex, program function keys, cursor control, erase functions, protected fields and full display attributes. The main difference between the 910/920 and the 925/950/955 emulations is in the code generated for cursor down and in control codes for display attributes. The special graphics character set and user-loadable status line are supported.

| PCPLUS KEYS | FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Backtab | Reverse Tab | 1B 49 |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Backspace | Character Delete | 7F |
| Insert | Insert Character | 1B 51 |
| Ctrl-Home | Insert Line | 1B 45 |
| Delete | Delete Character | 1B 57 |
| Ctrl-PgUp | Delete Line | 1B 52 |
| Home | Home Cursor | 1E |
| Cursor Up | Cursor Up | 0B |
| Cursor Down | Cursor Down (910/912/920) | 0A |
| Cursor Down | Cursor Down (925/950/955) | 16 |
| Cursor Left | Cursor Left | 08 |
| Cursor Right | Cursor Right | 0C |
| Ctrl-PgDn | Clear Screen | 1A |
| End | Line Erase | 1B 54 |
| Ctrl-End | Page Erase | 1B 59 |
| F1 | Function 1 (F1) | 01 40 0D |
| F2 | Function 2 (F2) | 01 41 0D |
| F3 | Function 3 (F3) | 01 42 0D |
| F4 | Function 4 (F4) | 01 43 0D |
| F5 | Function 5 (F5) | 01 44 0D |
| F6 | Function 6 (F6) | 01 45 0D |
| F7 | Function 7 (F7) | 01 46 0D |
| F8 | Function 8 (F8) | 01 47 0D |

| | | |
|---|---|---|
| F9 | Function 9 (F9) | 01 48 0D |
| F10 | Function 10 (F10) | 01 49 0D |
| F11 or Shift-F1 | Function 11 (F11) | 01 4A 0D |
| Shift-F3 | Shift Line Erase | 1B 74 |
| Shift-F4 | Shift Page Erase | 1B 79 |
| Shift-F5 | Shift Line Insert | 1B 4E |
| Shift-F6 | Shift Line Delete | 1B 4F |
| Shift-F7 | Shift Char Insert | 1B 71 |
| Shift-F8 | Shift Char Delete | 1B 72 |
| Alt-F10 | FUNCT (See note below.) | |

*Note To emulate the Televideo FUNCT key operation, press and release* [Alt]-[F10]*, then press and release the key you wish to use in conjunction with FUNCT. This will send the standard 3-byte FUNCT sequence: <SOH> <key pressed> <CR>.*

# IBM 3101

PROCOMM PLUS supports the standard IBM 3101 Model 1x/2x functions, including: full/half duplex, full character set, scroll on/off, program function keys, cursor control, and erase functions. Block mode is not supported.

| PCPLUS KEYS | 3101 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Home | Home Cursor | 1B 48 |
| Cursor Up | Cursor Up | 1B 41 |
| Cursor Down | Cursor Down | 1B 42 |
| Cursor Left | Cursor Left | 1B 44 |
| Cursor Right | Cursor Right | 1B 43 |
| Ctrl-PgDn | Clear screen | 1B 4C |
| End | Erase end of line | 1B 49 |
| Ctrl-End | Erase end of screen | 1B 4A |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Backspace | Character Delete | 7F |
| F1 | Program Function 1 (PF1) | 1B 61 0D |
| F2 | Program Function 2 (PF2) | 1B 62 0D |
| F3 | Program Function 3 (PF3) | 1B 63 0D |
| F4 | Program Function 4 (PF4) | 1B 64 0D |
| F5 | Program Function 5 (PF5) | 1B 65 0D |

| | | |
|---|---|---|
| F6 | Program Function 6 (PF6) | 1B 66 0D |
| F7 | Program Function 7 (PF7) | 1B 67 0D |
| F8 | Program Function 8 (PF8) | 1B 68 0D |

# *IBM 3161*

PROCOMM PLUS supports the standard IBM 3161 functions.

| PCPLUS KEYS | IBM 3161 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Home | Home Cursor | 1B 48 |
| Cursor Up | Cursor Up | 1B 41 |
| Cursor Down | Cursor Down | 1B 42 |
| Cursor Left | Cursor Left | 1B 44 |
| Cursor Right | Cursor Right | 1B 43 |
| End | Erase to end of line | 1B 49 |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-End | Erase EOP | 1B 4A |
| Ctrl-PgDn | Clear Page | 1B 4C |
| Ctrl-Backspace | Character Delete | 7F |
| F1 | Program Function 1 (PF1) | 1B 61 |
| F2 | Program Function 2 (PF2) | 1B 62 |
| F3 | Program Function 3 (PF3) | 1B 63 |
| F4 | Program Function 4 (PF4) | 1B 64 |
| F5 | Program Function 5 (PF5) | 1B 65 |
| F6 | Program Function 6 (PF6) | 1B 66 |
| F7 | Program Function 7 (PF7) | 1B 67 |
| F8 | Program Function 8 (PF8) | 1B 68 |
| F9 | Program Function 8 (PF9) | 1B 69 |
| F10 | Program Function 10 (PF10) | 1B 6A |
| F11 | Program Function 11 (PF11) | 1B 6B |
| F12 | Program Function 12 (PF12) | 1B 6C |
| Shift-F1 | Shift Program Function 1 (PF1) | 1B 21 61 |
| Shift-F2 | Shift Program Function 2 (PF2) | 1B 21 62 |
| Shift-F3 | Shift Program Function 3 (PF3) | 1B 21 63 |
| Shift-F4 | Shift Program Function 4 (PF4) | 1B 21 64 |
| Shift-F5 | Shift Program Function 5 (PF5) | 1B 21 65 |
| Shift-F6 | Shift Program Function 6 (PF6) | 1B 21 66 |
| Shift-F7 | Shift Program Function 7 (PF7) | 1B 21 67 |

| | | |
|---|---|---|
| Shift-F8 | Shift Program Function 8 (PF8) | 1B 21 68 |
| Shift-F9 | Shift Program Function 9 (PF9) | 1B 21 69 |
| Shift-F10 | Shift Program Function 10 (PF10) | 1B 21 6A |
| Shift-F11 | Shift Program Function 11 (PF11) | 1B 21 6B |
| Shift-F12 | Shift Program Function 12 (PF12) | 1B 21 6C |

## *Lear Siegler ADM 3A/5*

PROCOMM PLUS supports the standard ADM 3A/5 series functions, including: full/half duplex, full character set, erase functions, and cursor control.

| PCPLUS KEYS | ADM 3A/5 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Home | Home Cursor | 1E |
| Cursor Up | Cursor Up | 0B |
| Cursor Down | Cursor Down | 0A |
| Cursor Left | Cursor Left | 08 |
| Cursor Right | Cursor Right | 0C |
| Ctrl-PgDn | Clear screen | 1A |
| End | Erase end of line | 1B 54 |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Backspace | Character Delete | 7F |

## *Lear Siegler ADM 31*

PROCOMM PLUS supports the standard ADM 31 series functions.

| PCPLUS KEYS | ADM 31 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Backtab | Horizontal Backtab | 1B 49 |
| Insert | Character Insert | 1B 51 |
| Delete | Character Delete | 1B 57 |
| Backspace | Horizontal Backspace | 08 |
| Home | Home Cursor | 1E |
| End | Erase Line | 1B 54 |
| Cursor Up | Cursor Up | 0B |
| Cursor Down | Cursor Down | 0A |
| Cursor Left | Cursor Left | 08 |
| Cursor Right | Cursor Right | 0C |
| Ctrl-Home | Insert Line | 1B 45 |
| Ctrl-End | Erase Page | 1B 59 |
| Ctrl-PgUp | Delete Line | 1B 52 |

| | | |
|---|---|---|
| Ctrl-PgDn | Clear screen | 1A |
| Ctrl-Backspace | Delete | 7F |
| F1 | Function 1 (F1) | 01 40 0D |
| F2 | Function 2 (F2) | 01 41 0D |
| F3 | Function 3 (F3) | 01 42 0D |
| F4 | Function 4 (F4) | 01 43 0D |
| F5 | Function 5 (F5) | 01 44 0D |
| F6 | Function 6 (F6) | 01 45 0D |
| F7 | Function 7 (F7) | 01 46 0D |
| F8 | Function 8 (F8) | 01 47 0D |
| F9 | Function 9 (F9) | 01 48 0D |
| F10 | Function 10 (F10) | 01 49 0D |
| F11 or Shift-F1 | Function 11 (F11) | 01 4A 0D |
| F12 or Shift-F2 | Function 12 (F12) | 01 4B 0D |
| Shift-F3 | Function 13 (F13) | 01 4C 0D |
| Shift-F4 | Function 14 (F14) | 01 4D 0D |
| Shift-F5 | Function 15 (F15) | 01 4E 0D |
| Shift-F6 | Function 16 (F16) | 01 4F 0D |
| Ctrl-F1 | Shift Line Erase | 1B 74 |
| Ctrl-F2 | Shift Page Erase | 1B 79 |
| Ctrl-F3 | Shift Line Insert | 1B 4E |
| Ctrl-F4 | Shift Line Delete | 1B 4F |
| Ctrl-F5 | Shift Char Insert | 1B 71 |
| Ctrl-F6 | Shift Char Delete | 1B 72 |

## *Esprit 3*

PROCOMM PLUS supports the standard ESPRIT 3 series functions.

| PCPLUS KEYS | ESPRIT 3 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Backtab | Reverse Tab | 1B 49 |
| Insert | Insert Character | 1B 51 |
| Delete | Delete Character | 1B 57 |
| Ctrl-PgUp | Delete Line | 1B 52 |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Home | Insert Line | 1B 45 |
| Home | Home Cursor | 1E |
| Cursor Up | Cursor Up | 0B |
| Cursor Down | Cursor Down | 16 |
| Cursor Left | Cursor Left | 08 |
| Cursor Right | Cursor Right | 0C |
| Ctrl-PgDn | Clear screen | 1A |
| End | Line Erase | 1B 54 |

| | | |
|---|---|---|
| Ctrl-End | Page Erase | 1B 59 |
| Ctrl-Backspace | DEL | 7F |
| F1 | Function 1 (F1) | 01 40 0D |
| F2 | Function 2 (F2) | 01 41 0D |
| F3 | Function 3 (F3) | 01 42 0D |
| F4 | Function 4 (F4) | 01 43 0D |
| F5 | Function 5 (F5) | 01 44 0D |
| F6 | Function 6 (F6) | 01 45 0D |
| F7 | Function 7 (F7) | 01 46 0D |
| F8 | Function 8 (F8) | 01 47 0D |
| F9 | Function 9 (F9) | 01 48 0D |
| F10 | Function 10 (F10) | 01 49 0D |
| F11 or Shift-F1 | Function 11 (F11) | 01 4A 0D |
| Shift-F3 | Shift Line Erase | 1B 74 |
| Shift-F4 | Shift Page Erase | 1B 79 |
| Shift-F5 | Shift Line Insert | 1B 4E |
| Shift-F6 | Shift Line Delete | 1B 4F |
| Shift-F7 | Shift Character Insert | 1B 71 |
| Shift-F8 | Shift Character Delete | 1B 72 |

# *Heath/Zenith 19*

PROCOMM PLUS supports the standard Heath/Zenith 19 functions, including: full/half duplex, full character set, program function keys, erase functions, cursor control, and display attributes.

| PCPLUS KEYS | FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Home | Home Cursor | 1B 59 5F 5F |
| Cursor Up | Cursor Up | 1B 41 |
| Cursor Down | Cursor Down | 1B 42 |
| Cursor Left | Cursor Left | 1B 44 |
| Cursor Right | Cursor Right | 1B 43 |
| Ctrl-PgDn | Clear screen | 1B 45 |
| End | Erase end of line | 1B 54 |
| Ctrl-Home | Insert Line | 1B 4C |
| Ctrl-PgUp | Delete Line | 1B 4D |
| Ctrl-Backspace | Character Delete | 7F |
| F1 | Program Function 1 (PF1) | 1B 73 |
| F2 | Program Function 2 (PF2) | 1B 74 |
| F3 | Program Function 3 (PF3) | 1B 75 |
| F4 | Program Function 4 (PF4) | 1B 76 |
| F5 | Program Function 5 (PF5) | 1B 77 |

| | | |
|---|---|---|
| F6 | Program Function 6 (PF6) | 1B 50 |
| F7 | Program Function 7 (PF7) | 1B 51 |
| F8 | Program Function 8 (PF8) | 1B 52 |
| F9 | Program Function 9 (PF9) | 1B 30 |
| F10 | Program Function 10 (PF10) | 1B 31 |

# *ADDS 60 and 90*

PROCOMM PLUS supports the standard ADDS 60 and 90 functions.

| PCPLUS KEYS | ADD 60/90 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Home | Home Cursor | 01 |
| Cursor Up | Cursor Up | 1A |
| Cursor Down | Cursor Down | 0A |
| Cursor Left | Cursor Left | 15 |
| Cursor Right | Cursor Right | 06 |
| Ctrl-PgDn | Clear screen | 0C |
| End | Erase end of line | 1B 4B |
| Ctrl-End | Erase end of screen | 1B 6B |
| Insert | Insert Character | 1B 46 |
| Ctrl-Home | Insert Line | 1B 4D |
| Delete | Delete Character | 1B 45 |
| Ctrl-PgUp | Delete Line | 1B 6C |
| F1 | Function 1 (F1) | 02 31 0D |
| F2 | Function 2 (F2) | 02 32 0D |
| F3 | Function 3 (F3) | 02 33 0D |
| F4 | Function 4 (F4) | 02 34 0D |
| F5 | Function 5 (F5) | 02 35 0D |
| F6 | Function 6 (F6) | 02 36 0D |
| F7 | Function 7 (F7) | 02 37 0D |
| F8 | Function 8 (F8) | 02 38 0D |
| Shift-F1 | Shift Function 1 (F1) | 02 21 0D |
| Shift-F2 | Shift Function 2 (F2) | 02 22 0D |
| Shift-F3 | Shift Function 3 (F3) | 02 23 0D |
| Shift-F4 | Shift Function 4 (F4) | 02 24 0D |
| Shift-F5 | Shift Function 5 (F5) | 02 25 0D |
| Shift-F6 | Shift Function 6 (F6) | 02 26 0D |
| Shift-F7 | Shift Function 7 (F7) | 02 27 0D |
| Shift-F8 | Shift Function 8 (F8) | 02 28 0D |

# Wyse 50

PROCOMM PLUS supports the standard Wyse 50 functions, including: full/half duplex, program function keys, cursor control, erase functions, protected fields and full display attributes.

| PCPLUS KEYS | WYSE 50 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Backtab | Reverse Tab | 1B 49 |
| Backspace | Backspace | 08 |
| Ctrl-Backspace | Character Delete | 7F |
| Insert | Insert Character | 1B 51 |
| Ctrl-Home | Insert Line | 1B 45 |
| Delete | Delete Character | 1B 57 |
| Ctrl-PgUp | Delete Line | 1B 52 |
| Home | Home Cursor | 1E |
| Cursor Up | Cursor Up | 0B |
| Cursor Down | Cursor Down | 0A |
| Cursor Left | Cursor Left | 08 |
| Cursor Right | Cursor Right | 0C |
| Ctrl-PgDn | Clear Screen | 1A |
| End | Line Erase | 1B 54 |
| Ctrl-End | Page Erase | 1B 59 |
| F1 | Function 1 (F1) | 01 40 0D |
| F2 | Function 2 (F2) | 01 41 0D |
| F3 | Function 3 (F3) | 01 42 0D |
| F4 | Function 4 (F4) | 01 43 0D |
| F5 | Function 5 (F5) | 01 44 0D |
| F6 | Function 6 (F6) | 01 45 0D |
| F7 | Function 7 (F7) | 01 46 0D |
| F8 | Function 8 (F8) | 01 47 0D |
| F9 | Function 9 (F9) | 01 48 0D |
| F10 | Function 10 (F10) | 01 49 0D |
| F11 or Shift-F1 | Function 11 (F11) | 01 4A 0D |
| F12 or Shift-F2 | Function 12 (F12) | 01 4B 0D |
| Shift-F3 | Function 13 (F13) | 01 4C 0D |
| Shift-F4 | Function 14 (F14) | 01 4D 0D |
| Shift-F5 | Function 15 (F15) | 01 4E 0D |
| Shift-F6 | Function 16 (F16) | 01 4F 0D |
| Ctrl-F1 | Shift Line Erase | 1B 74 |
| Ctrl-F2 | Shift Page Erase | 1B 79 |
| Ctrl-F3 | Shift Line Insert | 1B 4E |
| Ctrl-F4 | Shift Line Delete | 1B 4F |

| | | |
|---|---|---|
| Ctrl-F5 | Shift Char Insert | 1B 71 |
| Ctrl-F6 | Shift Char Delete | 1B 72 |
| Alt-F10 | FUNCT ( See note below. ) | |

***Note*** *To emulate the* FUNCT *key operation, press and release Alt-F10, then press and release the key you wish to use in conjunction with* FUNCT. *This will send the standard 3-byte* FUNCT *sequence: <SOH> <key pressed> <CR>.*

# *Wyse 100*

PROCOMM PLUS supports the standard WYSE functions, including: full/half duplex, erase functions, inset/delete functions, cursor control, protected fields and display attributes.

| PCPLUS KEYS | WYSE 100 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Backtab | Reverse Tab | 1B 49 |
| Backspace | Backspace | 08 |
| Ctrl-Backspace | Character Delete | 7F |
| Insert | Insert Character | 1B 51 |
| Ctrl-Home | Insert Line | 1B 45 |
| Delete | Delete Character | 7F |
| Ctrl-PgUp | Delete Line | 1B 52 |
| Home | Home Cursor | 1E |
| Cursor Up | Cursor Up | 0B |
| Cursor Down | Cursor Down | 0A |
| Cursor Left | Cursor Left | 18 |
| Cursor Right | Cursor Right | 0C |
| Ctrl-PgDn | Clear Screen | 1A |
| End | Line Erase | 1B 54 |
| Ctrl-End | Page Erase | 1B 59 |
| F1 | Function 1 (F1) | 01 40 0D |
| F2 | Function 2 (F2) | 01 41 0D |
| F3 | Function 3 (F3) | 01 42 0D |
| F4 | Function 4 (F4) | 01 43 0D |
| F5 | Function 5 (F5) | 01 44 0D |
| F6 | Function 6 (F6) | 01 45 0D |
| F7 | Function 7 (F7) | 01 46 0D |
| F8 | Function 8 (F8) | 01 47 0D |
| Shift-F1 | Shift Function 1 (F1) | 01 48 0D |
| Shift-F2 | Shift Function 2 (F2) | 01 49 0D |
| Shift-F3 | Shift Function 3 (F3) | 01 4A 0D |
| Shift-F4 | Shift Function 4 (F4) | 01 4B 0D |

| | | |
|---|---|---|
| Shift-F5 | Shift Function 5 (F5) | 01 4C 0D |
| Shift-F6 | Shift Function 6 (F6) | 01 4D 0D |
| Shift-F7 | Shift Function 7 (F7) | 01 4E 0D |
| Shift-F8 | Shift Function 8 (F8) | 01 4F 0D |

## IBM 3270/950

PROCOMM PLUS includes this special "hybrid" emulation for access to IBM mainframes using asynchronous protocol convertors. This emulation maps the PC's keyboard to the IBM 3270 series keyboard. For screen addressing and control, it uses the TeleVideo 950 sequences. To use this emulation, inform your protocol convertor that you are using a TeleVideo 950 terminal. The default key definitions supplied with PROCOMM PLUS are for the IBM 7171 protocol converter, but can be easily changed for use with other convertors by using the PROCOMM PLUS key mapping facility.

| PCPLUS KEYS | 3270/950 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Enter | Enter | 0D |
| Keypad + or Keypad Enter or Ctrl-Home | Clear | 1A |
| Keypad * | | 01 8A 0D |
| Ctrl-F5 | Program Application 1 (PA1) | 01 2C 0D |
| Ctrl-F6 | Program Application 2 (PA2) | 01 2E 0D |
| Ctrl-F7 | Program Application 3 (PA3) | 01 2F 0D |
| Delete or Ctrl-Backspace or Grey Del | Delete Character | 7F |
| Insert or Grey Insert | Toggle Insert Mode | 1B 45 |
| End or Ctrl-End or Grey End | Erase End-of-field | 1B 52 |
| Ctrl-F8 | Erase Input | 1B 1B 52 |
| Cursor Up or Grey Cursor Up | Cursor Up | 0B |
| Cursor Down or Grey Cursor Down | Cursor Down | 16 |
| Cursor Left or Grey Cursor Left | Cursor Left | 08 |

| | | |
|---|---|---|
| Cursor Right | Cursor Right | 0C |
| or Grey Cursor Right | | |
| Home | Home | 1E |
| or Grey Home | | |
| F1 | Program Function 1 (PF1) | 01 40 0D |
| F2 | Program Function 2 (PF2) | 01 41 0D |
| F3 | Program Function 3 (PF3) | 01 42 0D |
| F4 | Program Function 4 (PF4) | 01 43 0D |
| F5 | Program Function 5 (PF5) | 01 44 0D |
| F6 | Program Function 6 (PF6) | 01 45 0D |
| F7 | Program Function 7 (PF7) | 01 46 0D |
| or Grey PgUp | | |
| F8 | Program Function 8 (PF8) | 01 47 0D |
| or Grey PgDn | | |
| F9 | Program Function 9 (PF9) | 01 48 0D |
| F10 | Program Function 10 (PF10) | 01 49 0D |
| F11 | Program Function 11 (PF11) | 01 4A 0D |
| or Shift-F1 | | |
| F12 | Program Function 12 (PF12) | 1B 51 |
| or Shift-F2 | | |
| Shift-F3 | Program Function 13 (PF13) | 01 60 0D |
| Shift-F4 | Program Function 14 (PF14) | 01 61 0D |
| Shift-F5 | Program Function 15 (PF15) | 01 62 0D |
| Shift-F6 | Program Function 16 (PF16) | 01 63 0D |
| Shift-F7 | Program Function 17 (PF17) | 01 64 0D |
| Shift-F8 | Program Function 18 (PF18) | 01 65 0D |
| Shift-F9 | Program Function 19 (PF19) | 01 66 0D |
| Shift-F10 | Program Function 20 (PF20) | 01 67 0D |
| Ctrl-F1 | Program Function 21 (PF21) | 01 68 0D |
| or Shift F11 | | |
| Ctrl-F2 | Program Function 22 (PF22) | 01 69 0D |
| or Shift F12 | | |
| Ctrl-F3 | Program Function 23 (PF23) | 01 6A 0D |
| Ctrl-F4 | Program Function 24 (PF24) | 1B 71 |
| Ctrl-F9 | Column Tab | 09 |
| Ctrl-F10 | Column Backtab | 1B 49 |
| Ctrl-PgUp | Indent | 1B 59 |
| Ctrl-PgDn | Undent | 1B 79 |
| Tab | Field Tab | 1B 54 |
| Backtab(Shift Tab) | Field Backtab | 1B 74 |
| Ctrl-J | Newline | 0A |
| or Ctrl-Enter | | |
| Ctrl-X | Type-ahead Purge | 18 |
| Ctrl-S | Pacing Start | 13 |
| Ctrl-Q | Pacing Stop | 11 |

| | | |
|---|---|---|
| Ctrl-T | Keyboard unlock | 14 |
| Ctrl-R | Char-error reset | 12 |
| Ctrl-G | Master Reset | 07 |
| Esc* | Redisplay | |

# AT&T 605

PROCOMM PLUS supports the standard AT&T 605 functions.

| PCPLUS KEYS | AT&T 605 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Insert | Insert | 1B 5B 40 |
| Ctrl-Home | Insert Line | 1B 5B 4C |
| Delete | Delete Character | 7F |
| Backspace | Horizontal Backspace | 08 |
| End or Ctrl-End | End | 1B 5B 32 34 3B 31 48 |
| Home | Home/Clear | 1B 5B 48 |
| Ctrl-PgUp | Page Up | 1B 5B 56 |
| Ctrl-PgDn | Page Down | 1B 5B 55 |
| Ctrl-Backspace | Delete Character | 7F |
| Cursor Up | Cursor Up | 1B 5B 41 |
| Cursor Down | Cursor Down | 1B 5B 42 |
| Cursor Left | Cursor Left | 1B 5B 44 |
| Cursor Right | Cursor Right | 1B 5B 43 |
| F1 | Function Key F1 | 1B 4F 63 |
| F2 | Function Key F2 | 1B 4F 64 |
| F3 | Function Key F3 | 1B 4F 65 |
| F4 | Function Key F4 | 1B 4F 66 |
| F5 | Function Key F5 | 1B 4F 67 |
| F6 | Function Key F6 | 1B 4F 68 |
| F7 | Function Key F7 | 1B 4F 69 |
| F8 | Function Key F8 | 1B 4F 6A |
| F9 | Function Key F9 | 1B 4F 6F |
| F10 | Function Key F10 | 1B 4F 70 |
| F11 | Function Key F11 | 1B 4F 71 |
| F12 | Function Key F12 | 1B 4F 72 |
| Shift-F1 | Function Key Shift F1 | 1B 4F 43 |
| Shift-F2 | Function Key Shift F2 | 1B 4F 44 |
| Shift-F3 | Function Key Shift F3 | 1B 4F 45 |
| Shift-F4 | Function Key Shift F4 | 1B 4F 46 |
| Shift-F5 | Function Key Shift F5 | 1B 4F 47 |
| Shift-F6 | Function Key Shift F6 | 1B 4F 48 |
| Shift-F7 | Function Key Shift F7 | 1B 4F 49 |
| Shift-F8 | Function Key Shift F8 | 1B 4F 4A |

| | | |
|---|---|---|
| Shift-F9 | Function Key Shift F9 | 1B 4F 4F |
| Shift-F10 | Function Key Shift F10 | 1B 4F 50 |
| Shift-F11 | Function Key Shift F11 | 1B 4F 51 |
| Shift-F12 | Function Key Shift F12 | 1B 4F 52 |
| Ctrl-F1 | Program Function 1 (PF1) | 1B 4F 50 |
| Ctrl-F2 | Program Function 2 (PF2) | 1B 4F 51 |
| Ctrl-F3 | Program Function 3 (PF3) | 1B 4F 52 |
| Ctrl-F4 | Program Function 4 (PF4) | 1B 4F 53 |
| Keypad- | Keypad Application mode DASH | 1B 4F 6D |
| Keypad* | Keypad Application mode COMMA | 1B 4F 6C |
| Keypad. | Keypad Application mode PERIOD | 1B 4F 6E |
| Keypad+ | Keypad Application mode ENTER | 1B 4F 4D |

## *AT&T 4410*

PROCOMM PLUS supports the standard AT&T 4410 functions.

| PCPLUS KEYS | AT&T 4410 FUNCTION | TRANSMITTED CODES |
|---|---|---|
| Tab | Horizontal Tab | 09 |
| Delete | Character Delete | 7F |
| Backspace | Horizontal Backspace | 08 |
| Ctrl-Backspace | Character Delete | 7F |
| Cursor Up | Cursor Up | 1B 5B 41 |
| Cursor Down | Cursor Down | 1B 5B 42 |
| Cursor Left | Cursor Left | 1B 5B 44 |
| Cursor Right | Cursor Right | 1B 5B 43 |
| F1 | Function Key F1 | 1B 4F 50 |
| F2 | Function Key F2 | 1B 4F 51 |
| F3 | Function Key F3 | 1B 4F 52 |
| F4 | Function Key F4 | 1B 4F 53 |
| F5 | Function Key F5 | 1B 4F 54 |
| F6 | Function Key F6 | 1B 4F 55 |
| F7 | Function Key F7 | 1B 4F 56 |
| F8 | Function Key F8 | 1B 4F 57 |

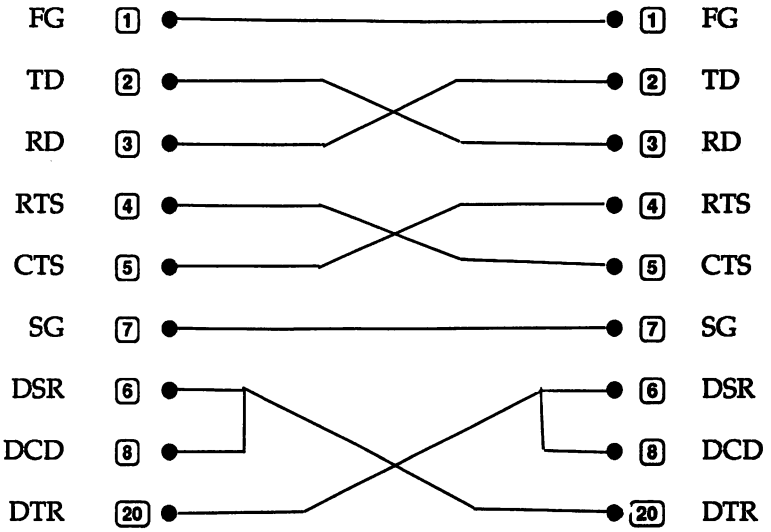
APPENDIX

# F

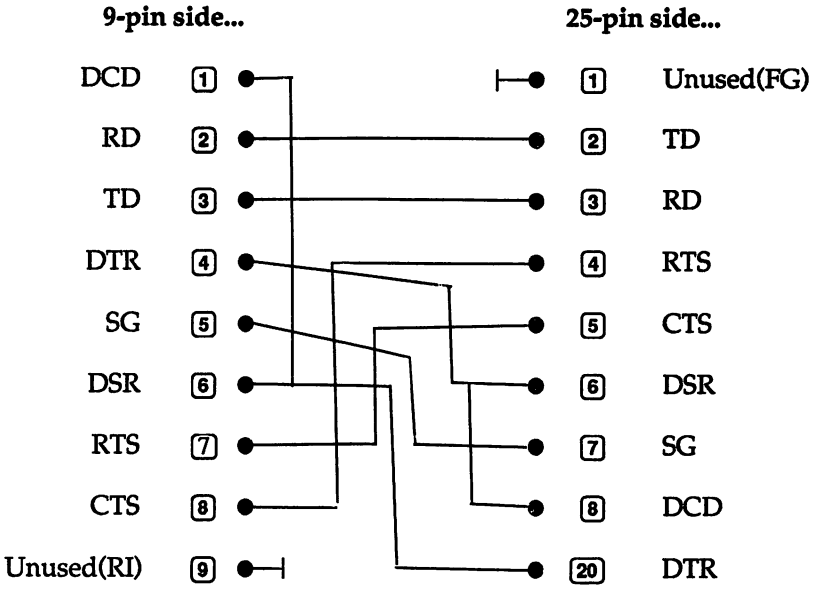
# Making a Null Modem Cable

You can make a null modem cable from a standard RS-232 cable by connecting the pins on one end of the cable to the pins on the other end as shown below.

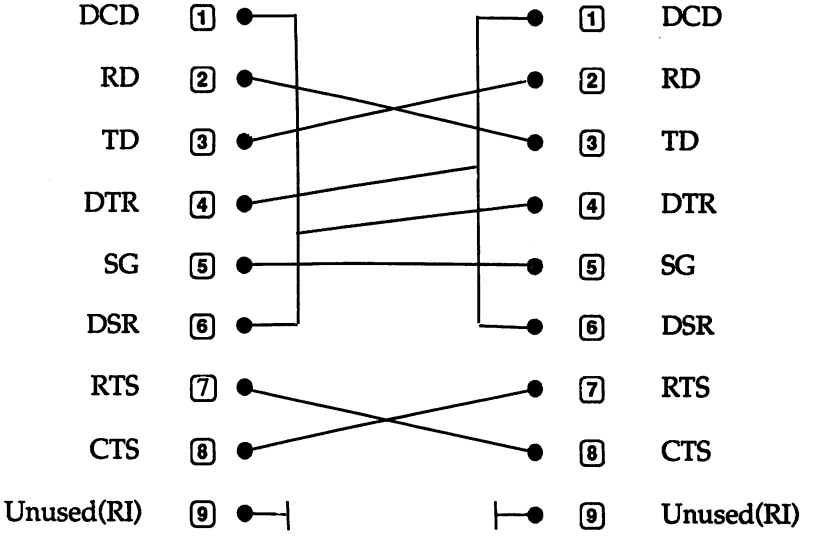
Here are the connections for a null modem cable with 25 pins on both sides:



Here are the connections for a null modem cable with 9 pins on one side and 25 pins on the other side:




Here are the connections for a null modem cable with 9 pins on both sides:



APPENDIX

# G

# Introduction to Communications


Overview ..... 290

Modems ..... 290

ASCII ..... 291

Bits and Bytes ..... 291

Serial and Parallel Transmission ..... 292

Start and Stop Bits ..... 293

Parity ..... 293

Protocols ..... 294

Baud Rate ..... 295

Duplex ..... 295

## Overview

If you're already familiar with the technical terms used to describe what computers and modems do, you can simply skip this section altogether. If, however, the jargon of the trade is new to you, the following definitions may help you better understand some of the instructions and commentary in this manual. Your manuals have been written to be as understandable as possible, and every attempt has been made to explain each step in clear and familiar language, but there are still times when a bit of technical information is absolutely necessary.

## Modems

In order to call another computer, you must have more than just a telephone line: you must also have some way of converting the computer's particular type of electrical impulses to the kind carried by telephone lines. Briefly (and quite simply, of course), your computer generates binary electrical signals (positive and negative charges, if you will). That's a very neat system and incredibly fast, but it doesn't work well in the telephone system because that system uses what are called "voice frequency signals" (or "analog signals") to transmit sounds. You can imagine the binary impulse as a series of off/on switches or clicks, while voice frequency signals are more like waves, up and down, increasing and decreasing pitch.

For all sorts of technical reasons, then, it's impossible for your computer to send its binary signals through telephone equipment designed for voice frequency signals. That problem is solved by the Modem, which both "MOdulates" and "DEModulates" (MO-DEM) the signals transferred between the computer and the telephone system. The modem "modulates" the signals put out by the computer, converting them from digital to analog form, then, at the other end, "demodulates" the analog signals, converting them back to digital form.

You can consult your modem's manual for further details about how to use your particular modem and about its operation and technical characteristics. The only other thing you really need to know for the moment is what is meant (for purposes of using PROCOMM PLUS) by "Hayes compatibility".

As it is generally used, the phrase "Hayes compatibility" indicates that a modem uses the command set developed by the manufacturers of Hayes modems. Those commands all use "AT" (for "ATtention") as a prefix, followed by specific symbols for various actions. For example, ATDT is used to command the modem to dial the number which follows using "tone" mode, while ATDP means to use "pulse" mode. ATH means "Hang-up," and so forth. Because most modems on the market today are "Hayes compatible," PROCOMM PLUS' default values are set to be compatible with that system as well, although you can readily change virtually any of PROCOMM PLUS' features to fit your particular modem's demands.

## ASCII

ASCII is an acronym for "American Standard Code for Information Interchange"; ASCII codes are the numeric values for each character read (or transmitted/received) by your computer. Each character is assigned a numerical value; for example, the letter capital "A" has an ASCII decimal value of 65, while a lower case "a" has a decimal value of 97. Lower-case letters all have values exactly 32 greater than their upper-case equivalents. There are similar numeric values for all printable characters—numerals, punctuation marks, and so forth. There are also values for special characters which you would not normally see displayed on the screen of your PC—control characters, for example.

The traditional ASCII character set consisted of 128 characters, with values ranging from 0 to 127. While other character sets have been used, none were very popular until the advent of the IBM-PC. With the release of their personal computer line, IBM defined what is often called the "extended" ASCII character set, which consists of 256 unique characters having values ranging from 0 to 255. The lower 128 characters (0-127) are the same as the standard ASCII set, while the upper 128 (128-255) consist of line drawing, mathematical and foreign language characters.

## Bits and Bytes

The "bit" is the smallest unit used to store information in your computer's memory (or on disk). A single bit can be thought of as a tiny switch which is either on or off. Bits are generally represented in binary mathematics (that form of math used by computers) as a 1 or a 0. Each character, numeral, control character and other small

piece of special information is stored by your computer in a "byte," a unit composed of 8 individual bits. A single bit can be represented by a 1 or 0, and a single byte can be represented by a string of eight 1's and 0's (for example, 10010010).

## *Serial and Parallel Transmission*

Ideally, information is exchanged between computers or between a single computer and a peripheral device (like your printer) in these eight bit-units—one "byte" at a time. Such an exchange of information is called "parallel transmission" (since all eight bits are sent at the same time over eight parallel lines). However, parallel transmission simply is not possible over telephone lines—which devote just a single line (or wire) to transmission in one direction and another line for transmission in the other. Thus, for transmitting computer data over telephone lines (which is the way most of us communicate with other computers), some adjustments must be made. Each byte must be broken down into its constituent bits and those bits transmitted one at a time. This mode of transmission is called "serial transmission" or "serial data transfer."

The potential difficulty with single bit transmission explains quite a bit about modem communications between computers: while parallel transmission makes the start and stop of any individual byte absolutely clear (the entire unit is a byte), serial transmission always entails the danger of the receiving computer not knowing where one byte ends and another begins. The loss of a single bit over a faulty telephone line may well result in the garbling of all the data that follows; to prevent data loss, we must therefore ensure that each byte is correct!

## Start and Stop Bits

This problem, though, has been largely overcome by the use of "start and stop bits". Preceding each full byte, the modem sends a "start bit," a low-voltage signal which informs the receiving computer (through its modem) that what follows is a byte. At the end of that byte, the sending modem includes another low voltage signal, this time a "stop bit" to indicate that the byte has ended.

## Parity

Finally, because there can be garbled data, particularly on telephone lines where the loss of a single bit is almost to be expected, there must be some way of at least flagging possible errors so the sending computer can know that the data was not correctly received. That problem is solved at its simplest level with what is called "parity." Parity is a relatively rough way of checking to assure that each byte is properly transmitted. The normal ASCII set (the first 128 characters) can be represented with just seven bits for each character. The eighth bit in such instances can be ignored, or it can be used as a "parity bit." If it is so used, the parity bit indicates a particular characteristic of the byte. If that characteristic and the actual byte do not match at the receiving end, then the receiving computer could detect that a possible error in transmission had occurred. Briefly, the parity bit is used to indicate whether there is an even or an odd number of 1's in the byte transmitted. If, for example, the byte is 1000001 (the binary representation of "A"), there are just two 1's; if, on the other hand, the character transmitted as "a" then the byte will be 1100001—a byte with three 1's. The parity bit, then, is used to indicate whether each particular byte has an even or odd number of 1's.

Parity may have several settings. If parity is set at "even", then the parity bit is set at 0 to indicate an even number of 1's and at 1 to indicate an odd number. If parity is set at "odd", then a 0 parity bit will indicate an odd number of 1's and a 1 parity bit will indicate an even number. For example, using even parity, the capital "A" would be transmitted as 01000001, while the second byte ("a") would be transmitted as 11100001. Parity may only be used when transmitting at 7 data bits.

This brings up an important point. In the CP/M operating system (which controlled most early personal computers), only seven bits were used to represent the 128 available ASCII characters. The eighth bit was generally ignored, or used for parity. Now, however, with DOS and the extended ASCII character set, all 8 bits are needed

to represent the 256 extended ASCII characters. Thus using "no parity" with 8 data bits means that there will be 8 data bits actually used. Some older software always ignores that 8th bit, thus you can get away with using no parity on your machine when the remote is actually sending it. PROCOMM PLUS, however, uses the full 8 bits. This can lead to some pretty strange looking strings of characters on your screen. If you are operating at 8 data bits and no parity, and see such "garbage" on your screen, try switching to 7 data bits with even parity. For information about doing this, see "Changing Line and Port Settings" in Chapter 8.

## Protocols

There are other, more reliable, modes of checking the accuracy of data transfer, called "protocols." These methods are far more complex than simple parity checking, but their level of reliability is also far greater, so they are especially useful for transmission of programs rather than mere text. An error in a text is easily caught and corrected. If you see the word "dnd" you can easily guess what it is supposed to be; if, on the other hand, a byte is garbled in a compiled program (a game, for example, or a word-processing program), you will not be able to see it (at least not readily), and it may prevent the program from running at all!

To avoid such difficulties, a variety of communications protocols have been developed, the more common of which are supported in PROCOMM PLUS. A protocol operates by marking the beginning and ending of larger blocks of data with special characters. In essence, the receiving computer sends a message to the sending computer that says, in effect, "You can start sending data any time now." Once it receives that message, the sending computer says "Here comes some data," then sends a block of data several bytes long, followed by a signal which asks, in effect, "Did you get all that?" If the receiving computer responds affirmatively, then the sending computer prepares the next block of data and sends it following the same procedures.

There is, though, another major difference between parity checking and protocols. While you can use parity checking without worrying much about what's going on at the other computer, the same protocol must be present on both the receiving and the sending computer to work. Thus if you are using the ZMODEM transfer protocol, both your computer and the host computer must be operating ZMODEM at the same time. It's probably not necessary here to give more details about how protocols work. Almost invariably the bulletin board or other remote system will specify which protocols you should use, and you can set PROCOMM PLUS

accordingly. If you are interested in more technical matters, there are several good books on the market which you can consult. You do, though, need to know which protocols you can use with PROCOMM PLUS so you will at least know the basic information you need to use them. See Appendix B for further details and listings of the protocols supported by PROCOMM PLUS.

## *Baud Rate*

In effect, baud rate is the speed of transmission of data bits—data bits per second (abbreviated "bps"). It is found by dividing one by the length of time it takes to transmit a single data bit. Thus a baud rate of 300 indicates that a single bit can be transmitted in something under 0.0033 second—or that there are three hundred bits of data transmitted per second. Similarly, a baud rate of 1200 indicates 1200 bps. Since it generally takes 10 bits to transmit a single character of data (8 data, 1 start and one stop bit), 1200 bps comes out to about 120 characters per second (cps), and 300 bps at 30 bps.

## *Duplex*

The terms "full duplex" and "half duplex" are bandied about by computer experts as if all of us knew precisely what they mean. Actually, the meaning is pretty easy to explain: "Half duplex" indicates that a modem is capable of either sending or receiving, but only one or the other at any given time. Full duplex is like a telephone: both persons using a phone can talk at once, or at least (being more polite), one can begin talking as soon as the other has finished, with no overt signal that the first has stopped talking. Full duplex modems work like the telephone; they simply recognize when one computer stops transmitting and the other begins.

In communications, duplex is often used to control, or indicate, who has control of the responsibility to echo text. When operating at full duplex, characters you type are sent to the remote, who then echos them back to you, where they are displayed. When using half duplex, on the other hand, characters you type are echoed locally by the software you are using, and characters sent to the remote are not echoed.

Using the wrong duplex setting can cause some difficulties. If you see double characters on your screen (like "DDoouubbllee cchhaarraacctteerrss"), then you should set duplex to full; if, on the

other hand, there should be characters printing on your screen but there are not, then set duplex to half.

# Index


^ 53, 255
~ 243
for pause in modem command 256
[/]
to find a Dialing Directory entry 75
[´] 18
to activate Menu line 164
&W software command 9, 236, 242
.ASP extension for script file 56, 126
.ASX extension for script file 56, 126
/b switch, when starting PROCOMM PLUS 14
/f switch, when starting PROCOMM PLUS 14
/S switch
when starting PROCOMM PLUS 13
^[ control code 255
^H control code 255
^J control code 255
^L control code 255
^M control code 53, 255
1K-XMODEM protocol 120, 121, 164
description 229
relaxed mode 174
1K-XMODEM-G 120, 121, 164
description 231
25 x 80 video mode 130

[A]

[Alt] and [Ctrl] key 16
[Alt]-[=] 99
[Alt]-[A] 104, 170
problems with 243
[Alt]-[B] 96, 155
[Alt]-[C] 98
[Alt]-[D] 26, 73, 102
[Alt]-[E] 66, 103, 137, 153
[Alt]-[F1] 112, 169
in Chat mode 98
to close log file 41
to open log file 40
[Alt]-[F2] 113
[Alt]-[F3] 66, 68, 101
[Alt]-[F4] 102, 127
problems with 243
to access DOS Gateway in Host mode 208
[Alt]-[F5] 61, 126
problems with 244
[Alt]-[F6] 123
in Chat mode 98
[Alt]-[F7] 97, 127, 259
[Alt]-[F8] 101, 110, 192, 247, 264
problems with 244
[Alt]-[F] 106
[Alt]-[G] 125, 169
[Alt]-[H] 107
problems with 236
to switch from data to voice 239
[Alt]-[I] 119
[Alt]-[J] 109
[Alt]-[K] 109
[Alt]-[L] 118
in Chat mode 98
[Alt]-[M] 52, 114
[Alt]-[N] 137
in Line/Port 137
in Terminal mode 125
[Alt]-[O] 97
to open a keyboard map file 193
[Alt]-[P] 66, 68, 111, 136, 143

[Alt]-[Q] 109, 201
[Alt]-[R] 122
[Alt]-[S] 21, 129, 138, 247
  problems with 244
  to save a keyboard map file 193
  to save line settings 137
[Alt]-[T] 105
[Alt]-[U] 125
[Alt]-[V] 49, 132, 170
  problems with 243
[Alt]-[W] 131, 163, 190
[Alt]-[X] 21, 105
  to exit PCEDIT 104
[Alt]-[Y] 68, 96, 146
[Alt]-[Z] 16, 17, 107
  problems with 243
  to list PCEDIT commands 104
[A]
  to add a Dialing Directory entry 75
  to add a Host-mode message using PCMAIL program 215
Abort command, in Host mode 206
Abort xfer if CD lost 174
Aborted downloads 174
Access level 202
ADDS 60 and 90 terminal emulation 279
ADM 31 terminal emulation 276
ADM 3A/5 terminal emulation 276
Alarm sound 159
Alarm time 159
ANSI 7 or 8 bit commands 157
ANSI terminal emulation 32, 162
ANSI X3.64 terminal emulation 270
Answer back 155
Answerback message 266
Answering a call 67
  automatically 68, 146, 148
  manually 68
ASCII characters 190, 257
  defined 291
ASCII download timeout 177
ASCII protocol 120, 121, 164, 175
  description 228
ASCII table 257
ASCII text file
  reading 132
ASCII transfer options 175
ASP 60
ASPECT Meta keys 113
ASPECT mode indentation 187
ASPECT programming language 56, 126
ASX 60
AT&T 4410 terminal emulation 285
AT&T 605 terminal emulation 284
Auto Answer command 96
Auto answer off command 148
Auto answer on command 147
Auto baud detect 142, 239
  in Host mode 166, 197
Auto downloading 180
AUTOEXEC.BAT file 10, 138, 192, 200, 210, 211, 212, 215, 244, 247, 248, 254
Automatic script compile mode
  problems with 244
Automating communications 56

[B]

[Backspace]
  to edit Dialing Directory entry 75
  to edit text entry 258
Background operation 259
Backspace character 155
Base address 137, 152
Baud rate 15, 26, 65, 67, 68
  defined 295
  incorrect 239
  sorting by 91
  specifying, from Terminal mode 135
  specifying, in Dialing Directory 29, 76
  switching automatically 134
BBS 27
Bit 292
Block size 226
Break 155
Break Key command 96
BS translation 155
BUFFERS command, in CONFIG.SYS file 11
Busy 150
Byte 292

[C]

[Ctrl]-[⊕] 157
[Ctrl]-[⊕] 157
[Ctrl]-[-] 130, 160
[Ctrl]-[\] 117

[Ctrl]-[J] 131
[Ctrl]-[Backspace]
to edit Dialing Directory entry 75
to edit text entry 258
[Ctrl]-[C] 205
to terminate PCPLUS.NWS display 203
[Ctrl]-[End]
to edit Dialing Directory entry 75
to edit text entry 258
[Ctrl]-[X]
to disconnect remote user in Host mode 208
[C]
to call Clipboard from Redisplay 123
to clear Meta key set 115
to compress PCPLUS.MSG and PCPLUS.HDR files using PCMAIL program 215
to cut Clipboard filenames 99
to unmark all Dialing Directory entries 87, 90
Call, answering 67
Call logging 163
Call result 55
Call-history data, displaying 88
Calling a computer 65
Calls
answering, automatically 96
Canceling dialing 88
Caret 53
Carriage return 53, 101, 142, 155, 176, 177, 178
represented by ^M 255
CB Simulator 97
CD high at exit 162
CD line 9, 143, 242
CD switch 9, 10
Change Directory command 97
Changing
current directory 97
wait-for-connection time 88
Character pacing 176
Characters, ASCII 257
Chat mode 97, 165
Block vs. Character mode 98
entering in Host mode 205, 208
Chdir script command 201
CIS B protocol *see COMPUSERVE B protocol*
Clear last date and total? prompt 33, 79
Clear Screen command 98
Clearing
Meta key set 115
Clipboard command 99
Clipboard separator 165
Closing
Meta key window 115
Color options 170, 172, 188
Colors
editor, specifying 188
on display 14
screen 239
screen, resetting 98
terminal screen, specifying 170
windows, specifying 172
COM port 10, 26, 91, 151
selecting with the Menu line 19
specifying, from Terminal mode 111, 135, 137
specifying, in Dialing Directory 31, 77
with Shell command in Host mode 206
Comma
for a pause while dialing 81
for pause when modem sends characters 256
Command
selecting from Menu line 18
Command, DOS, running 102
Command Menu 16, 17, 107
clearing 17
Command menu file, in Host mode 212
Command processor 245
COMMAND.COM file 102, 104, 116, 138, 192, 207, 243, 244, 245
Commands
entering PROCOMM PLUS 16
entering, using Menu line 17
entering, using [Alt] and [Ctrl] keys 16
in Terminal mode, summary 219
Comment, in PCPLUS.USR file 199
Communications
automating 51
Communications, introduction to 290
CompuServe 66, 97, 136, 155, 174, 227, 231, 237
Compuserve B protocol 120, 121, 155
description 231
Computer
calling 65

connecting to 64
dialing 83
disconnecting from 107
setting up 10
COMSPEC environment variable 245
CONFIG.SYS file 10, 238, 247
Connect 55, 66, 68, 135, 149, 150
Connect 1200 150
Connect 2400 150
Connect 4800 150
Connect 9600 150
Connect 19200 150
Connect 38400 150
Connect message 149
Connect mode
displaying in Dialing Directory 78
Connecting to a computer 64
Connection mode 78
specifying, in Dialing Directory 78
Connection, not making 241
Connection type 167, 197
Control code
in Meta keys 115
translating 255
CR translation 155
CR translation (download) 178
CR translation (upload) 177
CR-CR/LF Toggle command 101
Crash recovery 181
CTS line 154
Cursor movement
speeding up 162
Cursor type 159
Customizing PROCOMM PLUS 129

[D]

[Del]
to delete entry from dialing queue 87
to edit Dialing Directory entry 75
to edit text entry 258
[D]
to dial entry in Dialing Directory 83
Dashes, in telephone number 76
Data
printing 118
recording 111
redisplaying 123
Data bits 65, 66, 67
specifying, from Terminal mode 135
specifying, in Dialing Directory 30, 77
Data General 100 terminal emulation 268
Data General 200 and 210 terminal emulation 269
Data to voice, switching from 239
DATASTORM BBS 27, 35
Main menu 39
DEC VT220/320/Televideo 922 267
Default filename for log files 169
Default filename for screen snapshot files 169
Default path for downloaded files 169
Deleting
entry from dialing queue 87
Desqview 259
Device drivers, problems with 247
Dial Dir command 73
Dialing
again 85
canceling 88
maximum number of characters 76
multiple entries, by highlighting 86
multiple entries, by typing 85
number not in Dialing Directory 85
single entry, by highlighting 84
single entry, by typing 83
terminating 87
Dialing a computer 83
Dialing code 80
adding or changing 81
erasing 83
in telephone number 76
Dialing command 147
Dialing command suffix 147
Dialing Directory 26, 93, 253
activating 73, 102
adding an entry 75
and PCPLUS environment variable 11
changing an entry in 80
contents of entry 72
current 73
displaying 26
displaying additional entries 74
displaying with mouse 74
erasing entry in 89
exiting 91
highlighting an entry 74
jotting notes 90

marking entry 86
number of entries in 72
printing 90
sorting 91
switching 74
toggling the display 78
Dialing Directory Jot function
problems with 244
Dialing queue 83, 86, 87
deleting entry from 87
Dialing Window 35, 55, 66, 84, 85, 86, 88
Direct connection
specifying, in Dialing Directory 32
Directory
changing current 97
Directory of files 106
Disconnecting 107
remote user in Host mode 208
Disconnecting unintentionally 242
Disk caching 238
Display/Sound options 158
Displaying
Dialing Directory 26
DOS commands, running 102
DOS device 162
DOS gateway 237
DOS Gateway command 102
problems with 243
DOS search path 10
DOS video mode 130
DOS wildcards 106
Download command, in Host mode 204
Download directory 168, 198
Download file, in Host mode 211
Downloaded file
extra characters in 238
Downloaded files, aborted 174
Downloading a file 43, 119
BBS procedure 44
not working properly 237
PROCOMM PLUS procedure 46
Drop DTR between calls 142
Drop DTR to hangup 164
Dstorm.asp 56
DTR line 9, 107, 142, 164
DTR switch 9, 10, 107
Duplex 226
defined 295
Duplex mode 15, 26, 66, 153
specifying, in Dialing Directory 31, 77
switching 103
Duplex Toggle command 103

[E]

[Esc] 118
exiting the VIEW command 132
to abort file transfer 121
to cancel dialing 88
to cancel execution of script file 127
to clear Command Menu 17
to close Command Menu or help screen 108
to close Keyboard Macros window 54
to end file transfer 129
to end reading a file 50
to exit Chat mode 98
to exit Chat mode in Host mode 208
to exit Host mode 210
to exit keyboard-mapping screen 193
to exit Line Settings window 137
to exit Setup facility 140
to exit the Clipboard 101
to exit translation table 192
to finish cutting Clipboard names 99
[E]
to edit Clipboard filenames 100
to erase dialing code 83
to erase Dialing Directory entry 89
to write all Redisplay data 124
[End]
to display entries in Dialing Directory 74
Echo *see duplex mode*
Echo locally 175
Editing
Setup specification 140
text entry 258
Editor 103
specifying program name for 170
text invisible 189
to edit script file 122
Editor color options 188
Editor command 103
problems with 243
Editor options 186, 188
Editor startup mode 186
EGA/VGA true underline 156

Elapsed Time command 105
Emulations command 153
Enhanced keyboard speedup 162
ENQ 231, 266
ENQ control character 155
Entering commands
  using Menu line 17
  using [Alt] and [Ctrl] keys 16
Entry
  editing 258
Environment 245
Environment variable 245, 259
Environment variable, in AUTOEXEC.BAT
    file 11
Environments, multitasking 259
Erasing
  dialing code 83
  entry in Dialing Directory 89
Error correction 226
Error detection 226
Error detection method
  ZMODEM 180
ESPRIT 3 terminal emulation 277
Executing script file 126
Exit command 105
Exiting
  Dialing Directory 91
  Host mode 210
  PCMAIL program 215
  PROCOMM PLUS 21, 105
Expand blank lines 176
Expand Tabs 176, 187
Expanded memory 238
Exploding windows 158
Extended memory 238
External program error 244
  Argument list or environment too big
    245
  Error unknown 245
  File not executable 245
  File or path not found 244
  Not enough memory available 245
External protocol 232
  problems with 243
  name 185
  options 184
  type 185
EXTRA x 80 video mode 130
EXTRA x USER video mode 130

[F]

[F1]
  to enter Chat mode in Host mode 208
  to save changes in translation table 191
[F2]
  to display rest of translation table 190
  to log on in Host mode 209
[F3]
  to activate translation table 191
[F4]
  to deactivate translation table 192
[F]
  to find a Dialing Directory entry 75
  to search for text in data 123
FDX 103
FIDO bulletin board systems 230
File
  History, in Host mode 213
  log-on message 210
  mail, in Host mode 214
  new user message 211
  reading 132
  upload directory, in Host mode 213
File Directory command 106
File, download, in Host mode 211
File, help, in Host mode 211
File logging
  not working properly 237
  suspending 113
  turning off 112
  turning on 111
File, menu, in Host mode 212
File transfer key 164
File transfers
  1KXMODEM
    relaxed mode 174
  aborting if CD lost 174
  YMODEM
    relaxed mode 174
  ZMODEM
    partial transfers 174
File-transfer protocol *see Protocol*
File/path options 169
Filename lookup 164
Files
  downloaded, default path for 169

downloaded in Host mode, default path for 168
Host-mode, managing 210
listing 106
uploaded in Host mode, default path for 168
FILES command, in CONFIG.SYS file 11
Files command, in Host mode 204
Files directory 106
Files, location of Host-mode 215
Files used by PROCOMM PLUS 252
location 254
Flickering 159
Full duplex
defined 295

[G]

[G]
to go to a Dialing Directory entry 74
Garbage 135, 189, 237
Garbled data 66, 68
General options 141, 161, 173, 186
General Protocol Options 173
Goodbye action 167, 197
Goodbye command, in Host mode 205
Graphic adaptor requirements 7

[H]

[Home]
beginning of a VIEW file 132
to display entries in Dialing Directory 74
to display more data 123
to display script files 127
to edit Dialing Directory entry 75
to edit text entry 258
Half duplex
defined 295
Handshaking 154, 226, 228
Hanging up 107, 142, 164
Hangup command 107, 147
problems with 236
Hangup script 202
Hard-disk system
setting up 10
Hardware flow control (RTS/CTS) 154
Hdx 103
Heath/Zenith 19 terminal emulation 278
Help 236
Help command 107
Help command, in Host mode 204
Help facility 17, 107
Help file, in Host mode 211
History file, in Host mode 213
HOOK Meta keys 113
using 116
Host 202
inactivity timeout 205
Host command 201
Host mode 109, 144, 148, 166, 196
exiting 210
files in 210
files, location of 215
problems with 242
remote user logging on in 202
setting up 197
starting 200
starting, from script file 201
starting, from Terminal mode 201
user capabilities 204
Host mode command 109
Host mode options 166
Host mode prompt 212
Host mode, starting 243
Host script command 202
Host timeout 167, 197

[I]

[Ins]
to edit Dialing Directory entry 75
to edit text entry 258
IBM 3101 terminal emulation 274
problems with 246
IBM 3161 terminal emulation 275
IBM 3270/950 terminal emulation 282
IBM Extended graphic format 117
IBM PC 271
If connected script command 202
IMODEM protocol 120, 121, 164
description 232
Inactivity Timeout 205
Init Modem command 109
Init Modem Terminal mode command 144

Initialization command 143, 144
Installing PROCOMM PLUS 8
Interrupt line 137
IRQ line 152

[J]

[J]
to jot notes to Dialing Directory entries 90
Jot
attaching notes to entries 90

[K]

KERMIT Options 178
KERMIT protocol 120, 121
description 227
KERMIT Server Commands 109, 110, 227
Key Mapping 101, 110
for additional definitions 117
Key Mapping command 110, 192
Keyboard
speeding up 162
Keyboard file
displaying in Dialing Directory 78
specifying, in Dialing Directory 33, 79
Keyboard mapping facility
and PCPLUS environment variable 11
problems with 244
Keyboard Meta keys
creating 52

[L]

[L]
to print Dialing Directory 90
Last call 66
sorting by 91
Leave mail command, in Host mode 205
Left margin 188
LF translation (download) 178
LF translation (upload) 177
Limited users 198
Line feed 101, 155, 176, 177, 178
Line noise 66, 68
Line pacing 176
Line settings 15, 26, 65, 67
specifying, from Terminal mode 111, 135
Line Settings command 20, 136
Line Settings screen 20
Line setup 111
Line/Port Setup command 111, 135
Local echo 103
Log file 15, 39, 111
default filename for 169
opening 40
closing 112
Log File On/Off command 111
Log File Pause command 113
Log open 40, 113
Log-on message file 210
Log-on procedure 66
for a remote user in Host mode 202
recording for script file 122
Logging
calls 163
Logging data 39, 111
Logging on
to DATASTORM BBS 36
to host system in Host mode 209
Long-distance carrier 76, 80

[M]

[M]
to mark a block in Redisplay 124
Macro
adding or creating 114
Mail files, in Host mode 214
Manual dialing 85
Marking
Dialing Directory entry 86
Maximum dial attempts 143
Memory 102, 104, 192, 207, 237
Memory requirements 7
Memory-resident programs, problems with 247
Menu line 95, 219
activating 17
Answer command 96
Change Directory command 97
Chat mode command 97
Clear Screen command 98
Clipboard command 99
CR-CR/LF Toggle command 101

deactivating 18
Dial command 73
Dialing Directory command 102
DOS Gateway command 102
Download (Receive files) command 119
Echo (Duplex) command 103
Editor command 104
Elapsed Time command 105
Emulate command 153
Exit command 105
File Directory command 106
Hangup command 107
Help command 108
Hold Log (Pause) command 113
Host command 109, 201
Information command 119
Init Modem command 109
Kermit Server commands 110
Key Mapping command 110, 192
Learn (Record Mode) command 122
Line Settings command 111, 136
Log file command 111, 112
Meta Key command 114
Monitor Mode command 117
Redisplay command 123
Reset Terminal command 125
Run Script command 126
Screen Snapshot command 125
selecting command from 18
Setup command 129, 138
Toggle Lines command 130
Toggle Printer command 118
Toggle Status command 131
Translation command 131, 190
Upload (Send) command 127
View File command 132
Menu line key 164
Message area 15
Messages
modem result 149
Meta key 113
in Chat mode 97
problems with 243
to send break 96
and PCPLUS environment variable 11
screen 52
specifying, in Dialing Directory 33
using 54
Meta key file
specifying, in Dialing Directory 78
Meta key set
clearing 115
creating a new set 115
displaying current keys 114
saving 114
switching 115
Meta key window
closing 115
Modem
auto answer command 147, 148
auto-answer 146
defined 290
dialing command 147
dialing command suffix 147
echoing 144
external, setting up 9
hangup command 147
internal, setting up 10
not Hayes-compatible 238
Pause-between-calls time 142
result messages 145
switches, 9
tone duration and spacing 144
wait-for-connection time 141
wait-for-signal time 144
word/number commands 145
Modem commands 144
Modem connection
specifying, in Dialing Directory 32
Modem general options 141
Modem options 141, 144, 149, 151
Modem port assignments 151
Modem result messages 142, 149
MODEM7 protocol 120, 121
description 230
Monitor mode
exiting 118
invoking 117
logging data to disk 117
Monitor mode command 117
Monochrome monitors 156
Mouse
controlling the Help screen 108
Mouse X sensitivity 165
Mouse Y sensitivity 165
Multitasking environments 259


N

[N]
to find a Dialing Directory entry 75
Name
adding in Dialing Directory entry 75
sorting by 91
New user file 211
New user level 168, 197
No carrier 149, 150
No connect message 1 150
No connect message 2 150
No connect message 3 150
No connect message 4 150
Normal user
capabilities 204
Normal (Level 1) users in Host 198
Note file
displaying in Dialing Directory 78
specifying, in Dialing Directory 33, 79
Notes
attaching to Dialing Directory entries 90
Null modem cable 32, 167, 237
making 287
Number - *see Telephone number*

[O]

Omit EOF mark 187
Online Help facility command
problems with 243
Opening
log file 40
Operating system 7

[P]

[PgDn] 17
next page of a VIEW file 132
problems when using external protocol 243
to display another help screen 108
to display entries in Dialing Directory 74
to display script files 127
to download a file 46, 119
to read another screen 50
to redisplay more data 123
to switch terminal emulation for key mapping 193
[PgUp] 17
previous page of a VIEW file 132
problems when using external protocol 243
to display another help screen 108
to display entries in Dialing Directory 74
to display script files 127
to redisplay more data 123
to switch terminal emulation for key mapping 193
to upload a file 127
[P]
to paste all filenames 101
to specify dialing code 81
Pacing
character 176
line 176
transmit 163
Parallel transmission 292
Parity 65, 66, 67
defined 293
specifying, from Terminal mode 135
specifying, in Dialing Directory 30, 77
Password 78
displaying in Dialing Directory 78
specifying, in Dialing Directory 32, 78
Password, in PCPLUS.USR file 199
Path command 10, 244
Pause
modem, while dialing a Dialing Directory entry 81
tilde and comma, compared 256
Pause between calls 84, 85, 86, 87, 142
Pause character 163
PBX system 76, 80
PCEDIT 103
PCEDIT options 186
PCEDIT.EXE file 254
PCINSTAL program 8, 21, 27, 134
PCINSTAL.EXE file 252
PCKEYMAP program 193
PCKEYMAP.EXE file 192, 244, 252
PCKEYMAP.EXE program 192
PCMAIL program 214
exiting 215
starting, on floppy-disk system 214

starting, on hard disk system 214
using 215
PCMAIL.EXE file 252
PCPLUS directory 10
PCPLUS environment variable 11, 259
PCPLUS.DIR file 252
PCPLUS.DIR. Dialing Directory 73
PCPLUS.EXE file 248, 252
PCPLUS.FON file 89, 163, 253
PCPLUS.HDL file 211, 253
PCPLUS.HDR file 215, 253
PCPLUS.HDR file 214
PCPLUS.HHP file 204, 211, 253
PCPLUS.HLP file 253
PCPLUS.HMM file 212, 254
PCPLUS.HPM file 212, 254
PCPLUS.HRM file 212, 254
PCPLUS.HST file 213, 253
PCPLUS.HXM file 212, 254
PCPLUS.KBD file 110, 192, 252
PCPLUS.KEY file 114, 252
PCPLUS.LOG file 112, 169, 253
PCPLUS.MSG file 214, 215, 253
PCPLUS.NUF file 211, 253
PCPLUS.NWS file 203, 210, 253
PCPLUS.PRM file 252
PCPLUS.SCR file 125, 169, 254
PCPLUS.ULD 213
PCPLUS.ULD file 215, 254
PCPLUS.USR file 202, 210, 215, 254
format of 199
location of 200
setting up 198
PCPLUS.XLT file 191, 252
PCSETUP program 138, 139, 244, 252
Phone number
sorting by 91
Port Assignments 151
Port setup 111
Print device 162
Printer On/Off command 118
Printing
data 118
Printing Dialing Directory 90
Privilege level, in PCPLUS.USR file 199
Privileged (Level 2) user in Host
capabilities 206
definition 198
Problems
baud rate incorrect 239
connecting two computers directly 237
disconnecting unintentionally 242
extra characters in downloaded file 238
losing random characters 238
not making connection 241
running external program 243
screen allocation error 237
screen erased unintentionally 237
text invisible 172, 173
with a clone computer 238
with CompuServe 237
with DOS Gateway 237
with downloading a file 237, 238
with file logging 237
with hang-up command 236
with Host mode 242
with IBM 3101 terminal emulation 246
with modems not Hayes-compatible 238
with other programs 247
with Telenet 237
with terminal emulation 245
with Tymnet 237
with redisplay buffer 240
PROCOMM PLUS
customizing 129
exiting 21, 105
setting up 11
starting, on floppy disk system 13
starting, on hard disk system 12
version of 23
Program Information command 119
Program Meta keys 113
using 116
Program name for editor hot key 170
Program name for view utility hot key 170
Programs, running other 102
Protocol 45, 119, 128
defined 294
displaying in Dialing Directory 78
external 120, 128, 232
external, problems with 243
external, specifying command 185
external, specifying name 185
external, specifying type 185
specifying, in Dialing Directory 31, 77
specifying when downloading 120
summary 233

Protocol options 173, 175, 178, 179, 184
Protocol timing 174
Protocols
  descriptions 226
Pulldown Menu line
  definition 16
  activating in Setup facility 164

[Q]

[Q]
  to exit PCMAIL program 215

[R]

[R]
  revising an entry in Dialing Directory 28
  to add or create Meta key 114
  to review a Host-mode message using PCMAIL program 215
  to revise dialing code 81
  to revise Dialing Directory entry 80
  to revise Meta key 52
RAM 116, 138
Ram disks 238
RASCII protocol 120, 121, 164
  description 229
Read mail command, in Host mode 205
Reading
  file 132
Reading a file 49
Receive Files command 119
Receiver ZMODEM crash recovery 181
Receiving a file See Downloading a file
Record Mode command 122
Recording 122
Recording data 111
Redial
  maximum attempts 143
Redialing 85
Redisplay buffer 159
  problems with 240
Redisplay command 123
Remote bulletin board system, or BBS 196
Remote commands 206
Remote user
  controlling keyboard in Host mode 208
Remote user, disconnecting 208
Reset Terminal 125
Result messages 149
Revise Entry window 75
Revision window, in Dialing Directory 28
Right justify 187
Right margin 188
Ring 67
RTS line 154
RTS/CTS flow control 154
Running
  script file 126
Running DOS command or program 102

[S]

[space bar]
  to display another option in a Setup parameter 139
  to mark Dialing Directory entry 86
  to restart dialing 87
  to switch terminal emulation for key mapping 193
  to terminate dialing 87
  to toggle Meta key types 114
  to unmark Dialing Directory entry 87, 90
[Shift]-[Tab]
  to move to previous Dialing Directory entry 76
[S]
  to paste a single Clipboard filename 100
  to save Meta key set 54, 114
  to sort Dialing Directory 91
Save entry to disk?prompt 34
Save setup options 140
Saving
  Meta key set 114
  Setup changes 140
Screen
  clearing 98
  colors 239
  erased unintentionally 237
  flickering 159
  saving contents 125
  scrolling 154
  text invisible 172, 173, 189
Screen allocation error 237
Screen scroll 154

Screen Snapshot command 125
Screen snapshot file
default filename for 169
Script file 56, 126
canceling execution of 127
executing, when starting PROCOMM PLUS 14
in Dialing Directory 31
specifying, in Dialing Directory 59, 77
starting Host mode from 201
using, in Terminal mode 61
using, with Dialing Directory 58
Script Files command 126
SEALINK protocol 120, 121
description 231
Send CR between calls 142
Send Files command 127
Send init if CD high 143
Sender crash recovery 182
Sending a file *see Uploading a file*
Serial port 10
Serial transmission 292
Set baudrate script command 202
SET PCPLUS= command 11, 192, 200, 210, 211, 212, 215, 244, 248, 254
Setting up 8
computer 10
hard-disk system 10
Host mode 197
modem 8
PROCOMM PLUS 11
Setup command 138
Setup facility 11, 129
Setup Facility command 129, 137
problems with 244
Setup Main Menu 138, 141, 144, 149, 151, 153, 158, 161, 166, 169, 170, 172, 173, 175, 178, 179, 184, 186, 188
Setup Modem Options submenu 141, 144, 149, 151
Setup Terminal Options Menu 170, 172, 188
Shell command
problems with 244
Shell command, in Host mode 206
SHELLBOOT 198
Snapshot 125
Snow removal 159
Software conflicts 247
Software flow control (XON/XOFF) 154
Sorting
Dialing Directory 91
Sound
alarm, on/off 159
alarm time 159
Sound effects 158
Sounds, turning off 13
Spaces, in telephone number 76
Speaker, modem 67
Specifying
dialing code 81
Start bit 293
Starting
Host mode 200, 243
PCMAIL program, on floppy disk system 214
PCMAIL program, on hard disk system 214
Starting PROCOMM PLUS 13
in DESQview 259
on floppy disk system 13
on hard disk system 12
Status code 149
Status line 15, 159
log file 40, 41
showing HDX or FDX 103
showing LOG ON HOLD 113
showing RECORDING 122
showing SNAPSHOT 125
Status message 149
Stop bits 65, 67
defined 293
specifying 30
specifying, from Terminal mode 135
specifying, in Dialing Directory 77
Stripping 8th bit 177
Stripping characters *see Translation table*
Support, technical 22
Suspend until 202, 243
Switches, Modem *see Modem*
Switch
for starting PROCOMM PLUS 13
Switching
duplex mode 103
Meta key set 115
Sysop 210, 214
System Operator, capabilities in Host mode 208
System requirements 7

System type 166, 197

T

T
to call the Online Help topics screen 108
to display call history data 88
to paste tagged filename 100
Tab stop spacing 186
Tabs, expanding 176
Technical support 7, 22
Telephone number
adding in Dialing Directory entry 76
redialing 85
TeleVideo 900 terminal emulation 273
Televideo terminal emulation 162
TELINK protocol 121
description 230
Terminal color options 170
Terminal emulation 15, 110
ADDS 60 and 90 emulation 279
ADM 3/5 emulation 276
ADM 31 emulation 276
ANSI X3.64 emulation 270
AT&T 4410 emulation 285
AT&T 605 emulation 284
Data General 100 emulation 268
Data General 200 and 210 emulation 269
displaying in Dialing Directory 78
ESPRIT 3 emulation 277
Heath/Zenith 19 emulation 278
IBM 3101 emulation 274
IBM 3161 emulation 275
IBM 3270/950 emulation 282
IBM PC emulation 271
overview 264
problems with 245
remote commands in 162
specifying, in Dialing Directory 32, 78
specifying in Setup facility 139, 153
specifying in Terminal mode 153
TeleVideo 900 emulation 273
TTY emulation 265
VT102 emulation 266
VT52 emulation 265
VT220/320/TV922 emulation 267
Wyse 100 emulation 281
Wyse 50 emulation 280
Terminal mode 12, 13, 15, 91, 107, 140
starting Host mode from 201
using script file in 61
Terminal options 153
Terminal width 156
TEXT Meta keys 113
using 115
Tilde 243
to delay modem dialing 147, 148
Time and date stamping 180
Time command, in Host mode 205
Time, elapsed 105
Timeout 150
Toggle Lines command 130
Toggle Status Line command 131
Total calls
sorting by 91
Translate Table command 189
Translation command 190
Translation table 131, 163, 189
activating 191
and PCPLUS environment variable 11
deactivating 192
displaying 190
exiting 192
saving 191
Translation Table command 131
Transmit method 184
Transmit pacing 163
TTY terminal emulation 265
Type-ahead 115
Typographical conventions 4

U

Unmarking Dialing Directory entries 87
Updates 7
Upload command, in Host mode 204
Upload directory 168, 197
Upload directory file 213
Uploading a file 127
Use SHELLBOOT option 168
Use Wordwrap option 187
User video mode 130, 161

V

Version of PROCOMM PLUS 23
VGA extra line count 161
VGA graphic adaptors 161
VGA hardware 130
Video modes 130, 156
    toggling 130
Video startup mode 160
View a File command 132
    problems with 243
View utility, specifying program name for 170
Viewing a file 132
Voice 150
Voice to data, switching from 239
VT102 terminal emulation 162, 266
VT52 terminal emulation 265
VT220/320/TV922 terminal emulation 267

[W]

[W]
    to print displayed data 124
    to store displayed data in a file 124
Wait for connection 84, 85, 86, 87, 88, 141
Wait-for-connection time
    specifying, in Setup facility 141
    too small 242
Welcome message (Host) 166, 197, 243
Wildcards, DOS 106
Window color options 172
Windows (Microsoft) 260
Windows, exploding 158
Word processor *see Editor*
WP mode indentation 187
WXMODEM protocol 120, 121, 164
    description 230
Wyse 100 terminal emulation 281
Wyse 50 terminal emulation 280
Wyse terminal emulation 162

[X]

[X]
    to switch Dialing Directory 74
X modem string 142
XMODEM protocol 31, 120, 128, 164
    description 226
    relaxed 174
XON/XOFF 154, 228

[Y]

YMODEM BATCH protocol 121
YMODEM protocol 120
    description 229
    relaxed mode 174
YMODEM-G protocol 120
    description 231

[Z]

ZMODEM Options 179
ZMODEM protocol 120, 121
    auto downloading 180
    error detection method 180
    description 230
    parital file transfers 174
    receiver crash recovery 181
    sender crash recovery 182
    time and date stamping 180
    transmit method 184

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